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No. 87-436 (2)

Supreme Court, U.S.
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IN THE
Supreme Court of the United States
OCTOBER TERM, 1987

VINCENT C. LOMBARDI, *et al, Petitioners,*

v.

DOW CHEMICAL COMPANY, *et al., Respondents.*

RICHARD PINKNEY, *et al., Petitioners,*

v.

DOW CHEMICAL COMPANY, *et al., Respondents.*

CLARA FRATICELLI, *et al., Petitioners,*

v.

DOW CHEMICAL COMPANY, *et al., Respondents,*

and

GERALD HOGAN, *Petitioner,*

v.

DOW CHEMICAL COMPANY, *et al., Respondents.*

In re "Agent Orange" Product Liability Litigation

SINGLE APPENDIX
(Volume I, Pages 1a-620a)

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In re "AGENT ORANGE" PRODUCT LIABILITY LITIGATION.

MDL No. 381.

United States District Court,
E.D. New York.

Dec. 29, 1980

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INTRODUCTION

GEORGE C. PRATT, District Judge.

Plaintiffs, Vietnam war veterans and members of their families claiming to have suffered damage as a result of the veterans' exposure to herbicides in Vietnam[1], commenced these actions against the defendant chemical companies.[2] Defendants, seeking indemnification or contribution in the event they are held liable to plaintiffs, then served third party complaints against the United States.[3] Five motions are now considered: (1) the government's motion to dismiss the third party complaint on grounds of sovereign immunity; (2) plaintiffs' motion for class action certification; (3) defendants' mo-

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[1] Plaintiffs' complaints allege injury as a result of their exposure to a variety of herbicides including Agents Orange, Pink, Purple and Green. For convenience, the court will refer to these herbicides collectively as "Agent Orange".

[2] At the present time 19 companies or divisions have been named as defendants in actions consolidated before this court as MDL 381. Alphabetically listed, the defendants named to date are: Agriset, Inc.; Amchem Products, Inc.; Ansul Company; AKA Wormald America, Inc.; Diamond Alkali Company; Diamond Shamrock Corporation; Dow Chemical Company; GAF Corporation; Hercules, Inc.; Hoffman-Taff, Inc.; Hooker Chemical Company; Monsanto Company; North American Phillips Corporation; Northwest Industries, Inc.; Occidental Petroleum Company; Private Brands, Inc.; Riverdale Chemical; Syntex Corporation; Uniroyal, Inc. Although an individual action may name some of the chemical companies and not others, the court will refer to these companies collectively as "defendants".

Additionally, some of these named defendants have sought dismissal form some actions on the ground that they did not manufacture any of the herbicides in question. In some cases, plaintiffs have consented to a conditional dismissal of those defendants.

[3] As part of an on-going effort to avoid the service and filing of excessive quantities of duplicate papers, the court has deemed the answers and third party complaints of the defendants to be served in all actions.

tion to proceed with "serial trials"; and (5) plaintiffs' motion to serve and file a fifth amended verified complaint.

I. SUMMARY OF CLAIMS

There are four groups of plaintiffs: Vietnam veterans, their spouses, their parents, and their children. They assert numerous theories of liability, including strict products liability, negligence, breach of warranty, intentional tort and nuisance. Plaintiff veterans seek to recover for personal injuries caused by their exposure to Agent Orange. The family members seek to recover on various derivative claims; some of the children assert claims in their own right for genetic injury and birth defects caused by their parents' exposure to the Agent Orange; and some of the veterans' wives seek to recover in their own right for miscarriages.

In their third party complaints against the government defendants allege negligence, misuse of product, post-discharge failure to warn, implied indemnity, denial of due process and failure to comply with herbicide registration laws.

II. GOVERNMENT'S MOTION TO DISMISS THIRD PARTY COMPLAINTS

Moving to dismiss under F.R.C.P. 12(b)(6), the government claims "intra-military immunity" under the rule of *Feres v. United States*, 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950), questions defendants' standing to assert some of their claims, urges that other claims may only be considered in the Court of Claims, and argues the applicability of three statutory exceptions to federal court jurisdiction under the Federal Tort Claims Act: (1) the discretionary function exception, 28 U.S.C. § 2680(a); (2) the combatant exception, 28 U.S.C. § 2680(j); and (3) the foreign country exception, 28 U.S.C. § 2680(k).

A. FTCA AS A GENERAL WAIVER OF SOVEREIGN IMMUNITY

Under the Federal Tort Claims Act (FTCA), 28 U.S.C. §§ 1346(b) *et seq.*, the United States government waives its sovereign immunity from suits in tort, and vests jurisdiction over such claims exclusively in the United States District Courts. 28 U.S.C. § 1346(b). Its legislative history reveals two dominant congressional objectives. First, Congress sought to relieve itself of the overwhelming pressures and time consuming burdens of considering and passing upon the numerous private relief bills sought by claimants barred by the doctrine of sovereign immunity. *Feres v. United States*, 340 U.S. 135, 139–140, 71 S.Ct. 153, 156, 95 L.Ed. 152 (1950). Second, Congress sought to provide a judicial remedy for deserving claimants who had suffered injuries or losses at the hands of government officials and employees. 1 *Jayson, Handling Federal Tort Claims* § 65.01 at 3–3 (1980).

Although the FTCA "waives the Government's immunity from suit in sweeping language", *United States v. Yellow Cab Company,* 340 U.S. 543, 547, 71 S.Ct. 399, 402, 95 L.Ed. 523 (1951), the waiver is limited by the terms of the act's exceptions. If a claim falls within any exception to the FTCA, sovereign immunity has not been waived and the court is without jurisdiction to hear the case. *United States v. Orleans,* 425 U.S. 807, 814, 96 S.Ct. 1971, 1975, 48 L.Ed.2d 390 (1976); *Dalehite v. United States* , 346 U.S. 15, 30–31, 73 S.Ct. 956, 965, 97 L.Ed. 1427 (1953).

B. THE *FERES* DOCTRINE

In *Feres v. United States* , 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950), the Supreme Court determined that the FTCA did not waive sovereign immunity with respect to claims of servicemen arising out of activities incident to or arising out of their military service. The *Feres* Court consi-

dered three separate cases, two claims of medical malpractice and the claimed negligent quartering of a serviceman in a barracks containing a defective heating unit. All three presented the same basic question: whether a serviceman who sustained injury due to the negligence of others in the armed forces could maintain suit under the FTCA. The Court recognized its task as one of statutory interpretation, stating: "The only issue of law raised is whether the Tort Claims Act extends its remedy to one sustaining 'incident to the service' what under other circumstances would be an actionable wrong." 340 U.S. at 138, 71 S.Ct. at 155. After carefully considering the limited legislative history on point, the *Feres* Court concluded that "the Government is not liable under the Federal Tort Claims Act for injuries to servicemen where the injuries arise out of or are in the course of activity incident to service." 340 U.S. at 146, 71 S.Ct. at 159. Since much of the government's immunity defense turns on the Supreme Court's decision in *Feres,* a more detailed analysis of that case is appropriate.

At the outset, the *Feres* Court recognized the difficulty of interpreting a statute having so little legislative history:

> There are few guiding materials for our task of statutory construction. No committee reports or floor debates disclose what effect the statute was designed to have on the problem before us, or that it even was in mind. Under these circumstances, no conclusion can be above challenge, but if we misinterpret the Act, at least Congress possesses a ready remedy. 340 U.S. at 138, 71 S.Ct. at 155.

Digging deeper, the Court uncovered two clues to Congress' intent in enacting the FTCA. First, because the relationship between the government and members of the armed forces is "distinctively federal in character", 340 U.S. at 143, 71 S.Ct.

at 158, the Court determined that Congress did not intend the government's liability to members of the armed services to depend upon the law of the place where the soldier happened to be stationed at the time of injury:

> It would hardly be a rational plan of providing for those disabled in service by others in service to leave them dependent upon geographic considerations over which they have no control and to laws which fluctuate in existence and value. 340 U.S. at 143, 71 S.Ct. at 158.

Second, the Court examined Congress' failure to integrate a serviceman's possible remedy in tort with the statutory "no fault" compensation scheme provided under the Veterans Benefits Act and concluded that

> If Congress had contemplated that this Tort Act would be held to apply in cases of this kind [where a serviceman sued the government], it is difficult to see why it should have omitted any provision to adjust these two types of remedy [FTCA and Veterans Benefit Act] to each other. The absence of any such adjustment if persuasive that there was no awareness that the Act might be interpreted to permit recovery for injuries incident to military service.
>
> 340 U.S. at 144, 71 S.Ct. at 158.

A third factor supporting the "*Feres* doctrine" was later enunciated in *United States v. Brown*, 348 U.S. 110, 75 S.Ct. 141, 99 L.Ed. 139 (1954), where the Supreme Court considered "[t]he peculiar and special relationship of the soldier to his superiors, the effects of the maintenance of such suits on [military] discipline, and the extreme results that might obtain if suits under the Tort Claims Act were allowed for negligent orders given or negligent acts committed in the course of military duty." 348 U.S. at 112, 75 S.Ct. at 143; *see also*

Stencel Aero Engineering Corp. v. United States, 431 U.S. 666, 671–72, 97 S.Ct. 2054, 2057, 52 L.Ed.2d 665 (1977).

Although it concluded that Congress did not intend to include in the FTCA's waiver of sovereign immunity injuries sustained by a serviceman incident to his service, the *Feres* Court freely admitted that the issue was not free from doubt, and it invited congressional correction by calling attention to Congress' ability to legislatively remedy any erroneous interpretation of the statute. 340 U.S. at 138, 71 S.Ct. at 155. Many courts have questioned the wisdom of the *Feres* decision,[4] but its continued vitality is beyond dispute even to them.[5] Moreover, Congress's failure for 30 years to amend the FTCA and legislatively "correct" the *Feres* holding is a *sub silentio* "acquiesc[ence] in the holding of *Feres*", *United States v. Lee*, 400 F.2d 558, 561 (CA9 1968), *cert. denied*, 393 U.S. 1053, 89 S.Ct. 691, 21 L.Ed.2d 695 (1969), that strongly suggests that the Supreme Court correctly interpreted congressional intent.[8]

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[4] *See, e.g. Peluso v. United States*, 474 F.2d 605, 606 (CA3), *cert. denied*, 414 U.S. 879, 94 S.Ct. 50, 38 L.Ed.2d (1973) ("If the matter were open to us we would be receptive to appellants' argument that *Feres* should be reconsidered, and perhaps restricted"); *Thomason v. Sanchez*, 398 F.Supp. 500, 503 (D.N.J.1975) ("we previously expressed reservations about the continued validity of the broad *Feres* doctrine. Upon reconsidertion we reiterate that concern.")

[5] *See Peluso v. United States, supra*, at 606 ("[Feres] is controlling. Only the Supreme Court can reverse it."); *Thomason v. Sanchez*, 539 F.2d 955, 957 (CA3 1976) ("[W]e are powerless to jettison Feres or to dislodge it sufficiently to create and exception [here].") *See also Watkins v. United States*, 462 F.Supp. 980 (S.D.Ga.1977), *aff'd on opinion below*, 587 F.2d 279 (CA5 1979).

[6] This conclusion follows even though later decisions have repudiated some of the clues to intent that the Supreme Court relied upon in reaching that decision. *See Schwager v. United States*, 279 F.Supp. 262, 263 (E.D.Pa.1968).

Any doubt as to the validity of the *Feres* doctrine was laid to rest in *Stencel Aero Engineering Corp. v. United States*, 431 U.S. 666, 97 S.Ct. 2054, 52 L.Ed.2d 665 (1977), which extended the reach of the "well established doctrine of *Feres v. United States*" to third party claims against the government, 431 U.S. at 670, 97 S.Ct. at 2057, see discussion, *infra*.[7] Even the Third Circuit Court of Appeals, the court most critical of the *Feres* doctrine,[8] concedes *Feres'* continuing validity and broad application:

> Although the current climate of academic and judicial thought finds governmental immunity from suit in disfavor, a plausible explanation appears for its continued application to members of the armed forces injured while in the course of active duty, regardless of whether that injury is caused by the negligence of a superior officer or by a direct command. If claims for injuries sustained by members of the armed forces in the execution of military orders were subjected to the scrutiny of courts of justice, then the civil courts would be required to examine and pass upon the propriety of military decisions. The security and common defense of the country would quickly disintegrate under such meddling. "[A]ctions and essential military discipline would be impaired by subjecting the command to the public criticism and rebuke of any

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[7] *See also Jaffee v. United States*, 592 F.2d 712, 717 (CA3 1979), *cert. denied*, 441 U.S. 961, 99 S.Ct. 2406, 60 L.Ed.2d 1066 (1979); *Dilworth v. United States*, 387 F.2d 590, 591 (CA3 1967); *Buckingham v. United States*, 394 F.2d 483, 484 (CA4 1968).

[8] *See e.g., Thomason v. Sanchez*, 539 F.2d 955 (CA3 1976); *Peluso v. United States*, 474 F.2d 605 (CA3), *cert. denied*, 414 U.S. 879, 94 S.Ct. 50, 38 L.Ed.2d 124 (1973).

> member of the armed forces who chose to bring a suit against the United States". *Jefferson v. United States,* 178 F.2d 518, 520 (4th Cir. 1949), *aff'd sub nom., Feres v. United States,* 340 U.S. 135 (71 S.Ct. 153, 95 L.Ed. 152] (1950). Even if we were inclined to reconsider the doctrine in connection with an injury sustained as a result of a deliberate military command, we are foreclosed from so doing by the Supreme Court's recent reiteration of the doctrine, although in a different context in *United States v. Testan,* 424 U.S. 392, 96 S.Ct. 948, 47 L.Ed.2d 114 (1976).
>
> *Jaffe v. United States,* 592 F.2d 712, 717 (CA3 1979) (citations and footnote omitted).

C. THIRD PARTY ACTIONS AGAINST THE GOVERNMENT

The same court that determined in *Feres* that the FTCA did not waive sovereign immunity with respect to claims by servicemen arising out of activities incident to their military service also decided *United States v. Yellow Cab Company,* 340 U.S. 543, 71 S.Ct. 399, 95 L.Ed. 523 (1951), which held that the FTCA permits a tort defendant to implead the United States as a third party defendant under a theory of indemnity or contribution. This created a new question: whether such a third party claim may be maintained when plaintiff's direct claim against the government would be barred by the principles of *Feres*.

The Supreme Court did not consider this question until 1977, when, in *Stencel Aero Engineering Corp. v. United States,* 431 U.S. 666, 97 S.Ct. 2054, 52 L.Ed.2d 665 (1977), it resolved the "tension between *Feres and Yellow Cab*" by holding that third party claims against the govern-

ment are barred

> for essentially the same reasons that the direct action [against the government by plaintiff] is barred by *Feres* . * * * [T]he right of a third party to recover in an indemnity action against the United States recognized in *Yellow Cab,* must be held limited by the rationale of *Feres* where the injured party is a serviceman. 431 U.S. at 670, 673–4, 97 S.Ct. at 2058.

To permit recovery against the government, the Court observed, "would be to judicially admit at the back door that which has been legislatively turned away at the front door". 431 U.S. at 673, 97 S.Ct. at 2058, *quoting Laird v. Nelms,* 406 U.S. 797, 802, 92 S.Ct. 1899, 1902, 32 L.Ed.2d 499 (1972).

D. FERES/STENCEL IN THE CONTEXT OF THIS ACTION

To the extent that plaintiffs' complaints seek recovery against the defendant chemical companies, of course, the *Feres* doctrine has no application. 1 Jayson, *Handling Federal Tort Claims* § 15502 at 5–66 n.9 and 5–77 n.24. Under *Stencel Aero Engineering Corp. v. United States,* however, any damages recovered by plaintiffs against defendants that plaintiffs could not recover directly from the United States may not be the subject of a third party complaint against the United States. 1 Jayson, *Handling Federal Tort Claims* § 164 at 5–220.

> [N]either contribution nor indemnity may succeed without the support of the initial negligence. * * * [A]s the claimed contribution and indemnity must depend for success upon the alleged negligence of

> the Government towards plaintiffs, and that is a negligence which is not actionable, the claim must fail. *Drumgoole v. Virginia Electric and Power Company,* 170 F.Supp. 824, 825-26 (E.D. Va. 1952).

See also Stencel Aero Engineering Corp. v. United States, 431 U.S. 666, 97 S.Ct. 2054, 52 L.Ed.2d 665 (1977); *Certain Underwriters at Lloyds v. United States,* 511 F.2d 159 (CA5 1975); *Barr v. Brezina Construction Company,* 464 F.2d 1141 (CA 10 1972). For the sake of clear presentation in this opinion, however, the court will consider plaintiffs' claims as if they were asserted directly against the United States government, for, to the extent that plaintiffs may not maintain actions directly against the United States government under the principles of *Stencel Aero,* the defendants' third party claims against the government must fail as well.[9]

At the outset, it is clear that *Feres* applies to suits against individual servicemen,[10] claims by servicemen who served in Vietnam,[11] claims of intentional torts,[12] and claims

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[9] For convenience the court will refer to the principle that the government is immune from third party claims that would be barred by *Feres* if directly asserted against the government as "Feres/Stencel".

[10] *Tirrill v. MacNamara,* 451 F.2d 579 (CA9 1971); *Bailey v. DeQuevedo,* 375 F.2d 72 (CA3 1967), *cert. denied,* 389 U.S. 923, 88 S.Ct. 247, 19 L.Ed.2d 274 (1967); *Misko v. United States,* 453 F.Supp. 513, 514 (D.D.C.1977), *aff'd,* 593 F.2d 1371 (C.A.D.C.1979); *Pisciotta v. Ferrando,* 428 F. Supp. 685, 686 (S.D.N.Y.1977).

[11] *Rotko v. Abrams,* 338 F.Supp. 46, 47 (D.Conn.1971), *aff'd,* 455 F.2d 992 (CA2 1972); 1 Jayson, *Handling Federal Tort Claims § 155.–08[4][i] at 5–138.*

[12] *Citizen National Bank of Waukegan v. United States,* 594 F.2d 1154 (CA7 1979); *Jaffee v. United States,* 592 F.2d 712 (CA3 1979), *cert. de-*

styled as constitutional torts.[13] This leaves two issues: first, whether the court should apply the principles of *Feres/ Stencel* to this action at all; and second, whether plaintiffs' injuries arose out of or were suffered "in the course of activity incident to service." *Feres v. United States,* 340 U.S. at 146, 71 S.Ct. at 159.

E. SHOULD FERES/STENCEL APPLY TO THIS ACTION?

The government seeks to dismiss the third party complaints on the ground that the claims of the defendant chemical companies are barred by a straightforward application of *Feres/Stencel* principles. Defendants, however, argue that the court should undertake "a detailed and fresh examination of the rationale underlying those holdings [*Feres* and *Stencel*] in the light of other great and * * * superceding policy considerations", Hercules/ Diamond Shamrock/Monsanto Memorandum at 10, to determine if the *Feres* doctrine should be applied in this case.[14] In support, defendants cite the "number of occasions [the Supreme Court has] reexamined and redefined or abandoned certain reasons for its holding in [the *Feres*] case." Hercules/Diamond Shamrock/Monsanto Memorandum at 7.[15]

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nied, 441 U.S. 961, 99 S.Ct. 2406, 60 L.Ed.2d 1066 (1979); *Everrett v. United States,* 492 F.Supp. 318, 321 (S.D.Ohio 1980); *Schmid v. Rumsfeld,* 418 F.Supp. 19, 21 (N.D.Cal.1979).

[13] *Everett v. United States,* 492 F.Supp. 318, 322 (S.D. Ohio 1980); *Nagy v. United States,* 471 F.Supp. 383, 384 (D.D.C.1979); *Misko v. United States,* 453 F.Supp. 513, 515 (D.D.C. 1978), *aff'd,* 593 F.2d 1371 (C.A.D.C.1978); *Calhoun v. United States,* 475 F.Supp. 1, 4–5 (S.D.Cal.1977), *aff'd on opinion below,* 604 F.2d 647 (CA9 1979), *cert. denied,* 444 U.S. 1078, 100 S.Ct. 1029, 62 L.Ed.2d 761 (1980).

[14] *See also* Dow's Memorandum at 28; Thompson-Hayward's Memorandum at 12; Hooker's Memorandum at 6.

[15] *See also* Dow's Memorandum at 16.

[7] Defendants' attempts to reargue the underlying rationale of *Feres* must be rejected, however, for two reasons. First, *Feres* was a case of statutory interpretation. 340 U.S. at 138, 71 S.Ct. at 155. *Adams v. General Dynamics Corp.*, 385 F.Supp. 890, 891 (N.D.Cal.1974), *aff'd*, 535 F.2d 489 (CA9), *cert. denied*, 432 U.S. 905, 97 S.Ct. 2949, 53 L.Ed.2d 1077 (1976). Even were this court to believe the Supreme Court's reasoning to be erroneous,[16] neither the Court nor Congress itself has altered *Feres'* basic holding, that in enacting the FTCA Congress did not intend to waive sovereign immunity with respect to injuries or loss suffered by servicemen in the course of activity incident to their service.[17]

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[16] Although some of the principles relied upon by the *Feres* Court have since been discredited or repudiated, *see* 1 Jayson, *Handling, Federal Tort Claims*, § 155.05 at 5–86 through 5–91, much of the Court's reasoning remains valid and persuasive. *Stencel Aero Engineering Corp. v. United States*, 431 U.S. 666, 672–73, 97 S.Ct. 2054, 2058, 52 L.Ed.2d 665 (1977); *Jaffee v. United States*, 592 F.2d 712, 717(CA3 1979), *cert. denied*, 441 U.S. 961, 99 S.Ct. 2406, 60 L.Ed.2d 1066 (1979); *Coffee v. United States*, 324 F.Supp. 1088, 1087, 1088 (S.D.Cal.1971, *aff'd*,455 F.2d 1380 (CA9 1972).

[17] That Congress, despite ample opportunity, has failed to right any possible judicial misinterpretation indicates the soundness of the *Feres* conclusion regardless of whether specific elements of the court's reasoning remain valid. *See United States v. Lee et al.*, 400 F.2d 558 (CA9 1968), *cert. denied*, 393 U.S. 1053, 89S.Ct. 691, 21 L.Ed.2d 695 (1969), wherein the court found that

> *Congress has acquiesced in the holding of Feres* [by] permitting the decision to remain undisturbed for eighteen years * * * "[W]hen the questions are of statutory construction, not of constitutional import, Congress can rectify our mistake, if such it was, or change its policy at any time, and in these circumstances reversal is not readily to be made."
> 400 F.2d at 561, quoting *United States v. South Buffalo Railway Company et al.*, 333 U.S. 771, 774-75, 68 S.Ct. 868, 870, 92 L.Ed. 1077 (1948).

The reasoning of *Lee* is now twelve years stronger.

Second, in holding the government immune from claims by servicemen the Supreme Court was concerned with more than the effects of servicemen recovering against the government; the Court was also concerned about the disruptive effects caused by the very commencement of actions by servicemen complaining about the conduct of superiors. As the Court later observed in *United States v. Brown*, 348 U.S. 110, 75 S.Ct. 141, 99 L.Ed. 139 (1954):

> The peculiar and special relationship of the soldier to his superiors, the effects of the maintenance of such suits on discipline, and the extreme results that might obtain if such suits under the Tort Claims Act were allowed for negligent orders given or negligent acts committed in the course of military duty, led the [Feres] court to read [the Federal Tort Claims] Act as excluding claims of [servicemen for injuries incident to their service]. 348 U.S. at 112, 75 S.Ct. at 143.

Thus, it is the suit itself as much as the possibility of recovery, that the Supreme Court feared would disrupt military discipline and the orderly conduct of military affairs. *Henninger v. United States*, 473 F.2d 814, 815–16 (CA9), *cert. denied*, 414 U.S. 819, 94 S.Ct. 43, 38 L.Ed.2d 51 (1973). To reexamine the *Feres* rationale in light of the circumstances of this case as defendants suggest, would itself defeat one of the very factors defendants seek to have the court reconsider. As the Supreme Court noted long ago in discussing the relationship between a soldier and his superiors:

> An army is not a deliberate body. It is the executive arm. Its law is that of obedience. No question can be left open as to the right to command in the officer, or the duty of obedience in the soldier. Vigor and efficiency on the part of the officer and confidence among the soldiers in one another, are

> impaired if any question be left open as to their attitude to each other. *United States v. Grimley*, 137 U.S. 147, 153, 11 S.Ct. 54, 55, 34 L.Ed. 636 (1890).

For these reasons, this court will neither reconsider the underlying rationale of the *Feres* decision nor weigh the circumstances here presented against the "*Feres* factors".[18] Right or wrong, the Supreme Court's conclusion that Congress did not intend passage of the FTCA to act as a waiver of sovereign immunity as to claims of servicemen injured incident to their service remains the law of the land. The *Feres/Stencel* doctrine bars defendants' attempt to seek contribution or indemnity from the United States based on any recovery plaintiffs may obtain for injuries that arose out of or were suffered incident to service.

F. DID PLAINTIFFS' INJURIES ARISE OUT OF OR INCIDENT TO MILITARY SERVICE?

The second issue is whether the claims of particular plaintiffs arose out of or in the course of activity incident to service. As Professor Jayson has noted, "neither the [Federal Tort Claims] Act nor the opinions of the Supreme Court have indi-

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[18] Other courts have rejected similar attempts to reargue the "*Feres* factors" on a case-by-case basis. *See e.g., Torres v. United States*, 621 F.2d 30, 32 (CA7 1980) (*Feres* applies even without nexus between military discipline and injury); *Joseph v. United States*, 505 F.2d 525, 527 (CA7 1974) (denial of veterans benefits "completely independent" from consideration of applicability of *Feres* doctrine); *Henninger v. United States*, 473 F.2d 814, 94 S.Ct. 43, 38 L.Ed.2d 51 (1973) (although negligence at discharge does not affect military discipline, *Feres* still applies); *Healy v. United States*, 192 F.Supp.325, 328 (S.D.N.Y.1961), *aff'd on opinion below*, 295 F.2d 958 (CA2 1961) (availability of veterans benefits not controlling); *Morgan v. United States*, 366 F.Supp. 938, 939 (N.D.Fla.1973) (*Feres* bars claim even though plaintiff not subject to military discipline at time of injury); *see also*, 1 Jayson, *Handling Federal Tort Claims* § 155.02 at 5–74.

cated definitively the full meaning of the phrase 'incident to service'". 1 Jayson, *Handling Federal Tort Claims* § 155.01 at 5–65.[19] This lack of definition complicates the task of applying the standard considerably, 1 Jayson *Handling Federal Tort Claims* § 155.01 at 5–65, but certain principles do emerge from an examination of the cases.

1. *General Principles*

First, the phrase "incident to service" is not to be narrowly applied or "restricted to actual military operations such as field maneuvers or small arms instruction." *Hass v. United States*, 518 F.2d 1138, 1141 (CA4 1975). Rather, "incident to service" is a broad concept that depends on a rational connection between the plaintiff's claim or loss and his status as a member of the armed forces. *Woodside v. United States*, 606 F.2d 134, 141 (CA6 1979); *Harten v. Coons*, 502 F.2d 1363, 1365 (CA 10 1974), *cert. denied*, 420 U.S. 963, 95 S.Ct. 1354, 43 L.Ed.2d 441 (1975). Professor Jayson summarizes this concept:

> [I]f the serviceman's injury or loss, when viewed in all the surrounding circumstances, has a real and substantial relationship to his military service, it will be regarded as incident to service and consequently barred under the *Feres* doctrine. 1 Jayson, *Handling Federal Tort Claims* § 155.02 at 5–66.[20]

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[19] "The *Brooks-Feres-Brown* line of cases illustrates that the incident to service test is not easy to define and apply." *Woodside v. United States*, 606 F.2d 134, 141 (CA6 1979).

[20] *See also Healy v. United States*, 192 F.Supp. 325, 327 n.8 (S.D.N.Y.1961), *aff'd*, 295 F.2d 958 (CA1 1961) ("special soldier-Government relationship which embraces the incident-to-service concept covers those wrongs which, although not sustained in the course of active duty, are so closely related to it that they may be deemed 'incident' to that

Second, the cases applying the *Feres* doctrine emphasize that "it is the *status* of the claimant as a serviceman rather than the legal theory of his claim which governs." *Rotko v. Abrams*, 338 F.Supp. 46, 47 (D.Conn.1971) (emphasis added), *aff'd on opinion below*, 455 F.2d 992 (CA2 1972).[21] Thus, the *Feres* doctrine has barred the claims of off duty servicemen injured before leaving their military base, *Watkins v. United States*, 462 F.Supp. 980, 988–89 (S.D.Ga.1977), *aff'd on opinion below*, 587 F.2d 279 (CA5 1979), of off duty serviceman injured while "hitching" a ride home on military aircraft, *Archer v. United States*, 217 F.2d 548, 552 (CA9 1954), *cert. denied*, 348 U.S. 953, 75 S.Ct. 441, 99 L.Ed. 745 (1955); *Homlitas v. United States*, 202 F.Supp. 520 (D.Ore.1962); *Fass. v. United States*, 191 F.Supp. 367 (E.D.N.Y.1961), and the wrongful death claim of the widow of a serviceman killed in an air crash while receiving flight instruction toward a commercial pilot's license. *Woodside v. United States*, 606 F.2d 134 (CA6 1979).

Third, at the time of his injury plaintiff need not be on any military mission. *Feres v. United States*, 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950) (serviceman died when barracks he was sleeping in burned due to defective

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duty"). 1 Jayson, *Handling Federal Tort Claims* § 155.02 at 5–79 through 5– 80 ("in order for a claim to be service-incident, there does not have to be any proximate causation in the common-law tort sense, between the military service or employment in the damage. All that is required is that as an incident of his service or employment the claimant is placed in a position wheres he is surrounded with conditions giving rise to the claim").

[21] *See also U.S. v. Lee*, 400 F.2d 558, 562 (CA9 1968), *cert. denied*, 393 U.S. 1053, 89S.Ct. 691, 21 L.Ed.2d 695 (1969); *Knoch v. United States*, 316 F.2d 532, 534 (CA9 1963); *Frazier v. United States*, 372 F.Supp. 208, 210 (M.D.Fla.1973).

heating unit),[22] nor subject to military discipline, *Hall v. United States*, 451 F.2d 353, 354 (CA1 1971) (no "connection between the activity which injured plaintiff and [military] discipline" necessary).[23]

Professor Jayson concisely and fairly synthesizes the "incident to service" cases as follows:

> The duty status of the serviceman-claimant is of particular significance in determining whether the injury or loss was incident to service. The [Supreme Court's rationale in *Fernes/Stencel]* applies to almost every situation which can be envisaged in which the injury or loss was sustained by a serviceman while on duty (as distinguished from one who is on leave or furlough), and it seems safe to say that the *Feres* doctrine will always apply in such circumstances. 1 Jayson, *Handling Federal Tort Claims* § 155.02 at 5–59 through 5–71.
>
> [I]f the serviceman's injury or loss occurs while he is off duty, while he is not within the physical confines of his military base, while he is not engaged in any military mission, and is not directly under military discipline, it is likely that the *Brooks* doctrine allowing Tort Claims Act recovery will apply;[24] in other words, that the injury or loss will

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[22] *See Also Hass v. United States*, 518 F.2d 1138, 1141 (CA4 1975) (*Feres* bars claim of off-duty serviceman injured while riding a dangerous horse rented from a Marine Corps stable).

[23] *See also Hass v. United States*, 518 F.2d 1138, 1140 (CA41975);*James v. United States*, 358 F.Supp. 1381 (D.R.I.1973), *aff'd*, 530 F.2d 962 (CA1), *cert. denied*, 429 U.S. 998, 97 S.Ct. 523, 50 L.Ed.2d 608 (1976).

[24] In *Brooks v. United States*, 337 U.S. 49, 69 S.Ct. 918, 93 L.Ed. 1200 (1949), the Supreme Court held that a serviceman may recover

be regarded as not incident to service. It should be noted, however, that the application of *Brooks* generally requires all of the mentioned factual elements to be present. Contrariwise, if the injury or loss occurs while the serviceman is on duty, or—without regard to whether he is on or off duty—if it occurs on the military base where he is stationed or on a military aircraft where he is directly under military control and discipline, or if it occurs while he is engaged in a military mission, it is likely that the *Feres* doctrine excluding the claim will apply. Again speaking generally, the presence of any one of the mentioned factual elements will bring application of the *Feres* doctrine. Jayson, *Handling Federal Tort Claims* § 155.02 at 5–67 through 5–68.

2. *Application of Feres/Stencel to Plaintiffs' Claims*

(a) Plaintiff Veterans' Claims of Exposure

The veterans' claims of injury clearly arise from their alleged exposure to Agent Orange during their military service. While virtually all of the veterans allege that their exposure took place in southeast Asia as a direct result of government efforts to defoliate the forests during the Vietnam war, the circumstances of each veteran's claimed exposure may vary. Some claim to have been directly sprayed with Agent Orange; some claim to have come into contact with Agent

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under the FTCA on claims which have no relationship to his military service. Anticipating the issues ultimately considered in *Feres* one term later, the Court stated:

> we are dealing with an accident which had nothing to do with the Brooks' army careers, injuries not caused by their service except in the sense that all human events depend upon what has transpired. Were the accident incident to the Brooks' service, a wholly different case would be presented. We express no opinion as to it * * *. 337 U.S. at 52, 69 S.Ct. at 920.

Orange as a result of being transported through sprayed areas; others claim to have been exposed to Agent Orange by ingesting water or food contaminated with the herbicide; and still others claim exposure during the transportation and handling of Agent Orange or its containers.

Whatever the facts surrounding a particular veteran's claim of exposure may be,[25] each veteran's presence in southeast Asia resulted solely from their military service, and, as to each veteran, "as an incident to his service or employment [he was] placed in a position where he [was] surrounded with conditions giving rise to the claim" of exposure. *See* 1 Jayson *Handling Federal Tort Claims* § 155.02 at 5–78 through 5–79. Even veterans who claim injury as the result of exposure to Agent Orange while off duty are within the parameters of the *Feres* doctrine because "when viewed in all the surrounding circumstances", a veteran's exposure in southeast Asia to a herbicide used for military purposes "has a real and substantial relationship to his military service * * * and consequently [his claim] is barred under the *Feres* doctrine." 1 Jayson, *Handling Federal Tort Claims* § 155.02 at 5–66.[26]

The analysis is similar for those veterans who claim that their exposure to Agent Orange occurred within the United

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[25] Defendants' attempts in connection with this motion to require individual factual hearings on the circumstances of each verteran's exposure to Agent Orange must be rejected. Such rejection, however, does not preclude later examination of individual plaintiffs concerning the circumstances of their exposure to the extent that they may bear on other issues, *e.d.*, individual liability or damage questions.

[26] *See also Woodside v. United States*, 606 F.2d 134, 141 (CA6 1979) ("Where the two [the injury causing activity and the Armed Forces] are closely associated or naturally related, the activity will be deemed "incident to service" even though not an essential or integral part of the mission of the Armed Forces and even though not directly involving a command relationship between the soldier and the military").

States or places other than southeast Asia during their military service. Their handling, transportation or distribution of Agent Orange during the course of their military duties was incident to their service, and their claims are equally barred under the *Feres* doctrine.

(b) Post–Discharge Failure to Warn

Only one of plaintiff veterans' claims does not fall easily under this analysis, e.g., that defendants breached a post-discharge duty to the veterans by failing to notify them of new scientific information concerning the possible harm that could result from exposure to Agent Orange. Plaintiff veterans allege that defendants' failure to inform them of possible dangers associated with exposure to Agent Orange prevented them from seeking more frequent medical examinations and thereby insuring early detection and treatment of disease. Defendants seek indemnity and contribution from the government on this claim too.

Defendants rely on three cases in opposition to the government's motion to dismiss these "post-discharge" claims: *Schwartz v. United States*, 230 F.Supp. 536 (E.D.Pa. 1964); *Thornwell v. United States*, 471 F.Supp. 344 (D.D.C.1979); *Everett v. United States*, 492 F.Supp. 318 (S.D.Ohio 1980).

In *Schwartz v. United States* a serviceman treated for a sinus condition during the course of his military service had a radioactive dye, umbrathor, inserted into his sinus. After discharge from the military, plaintiff sought additional medical treatment for his sinus difficulties, but the Veterans Administration hospital that considered his treatment failed to obtain and examine his medical records, and, as a result of the hospital's negligence, the continued presence of the earlier-inserted umbrathor went undetected. As a result plaintiff contracted cancer. The court held that *Feres* did not bar plaintiff's claim against the government, because plaintiff's

claim of negligence lay not in the original insertion of the umbrathor at the time he was in the military; rather, the court found that the actionable negligence was the hospital's failure to take reasonable steps to diagnose and solve plaintiff's problem, the continued presence of the umbrathor in his sinus. 230 F.Supp. at 539–40. The court further opined that the government was negligent for its failure to followup its umbrathor patients in order to inform them of newly discovered dangers associated with the drug. 230 F.Supp. at 540.

In the second case relied on by the defendants, *Thornwell v. United States*, a former serviceman alleged that he was intentionally drugged with LSD as part of a secret government experiment and that the government negligently failed to warn plaintiff that his exposure to the drug subjected him to certain medical risks. The *Thornwell* court, noting the difficulties that courts encounter when the acts complained of commence while plaintiff is on active duty and then continue until well after discharge, 471 F.Supp. at 350, held that Thornwell's claim against the government was not barred by the principles of *Feres* because he did not allege merely continuing negligence. Rather,

> [h]e claim[ed] that he was *intentionally* harmed while he was on active duty and he further claim[ed] that, after he became a citizen [left the military], the defendants failed to exercise their duty of care by neglecting to rescue him from the position of danger which they had created, * * * two distinctly separate patterns of conduct, one intentional and [one] negligent. 471 F.Supp. at 351.

The *Thornwell* court then found that plaintiff had alleged "two entirely different torts", and since the "complaint [was] perfectly clear in its allegation that the negligent act occurred, *in its entirety*, after [plaintiff] attained civilian status",

471 F.Supp. at 351 (emphasis in original), plaintiff's claim of governmental negligence was not barred by *Feres*. *Id.* The *Thornwell* court divided the cases involving servicemen's claims of post-discharge negligence into three types:

> To summarize the relevant precedent, it appears that there are three types of personal injury cases which involve post-discharge negligence. In the first case, the military performed separate negligent acts (i.e., two improper operations), one before, and one after, discharge; *United States v. Brown*, 348 U.S. 110 [75 S.Ct. 141, 99 L.Ed. 139], and *Hungerford v. United States*, 192 F.Supp. 581 (N.D. Cal.1961), *rev'd on other grounds*, 307 F.2d 99 (9th Cir. 1962), both clearly indicate that the injured veteran may recover for the later act. In the second case, a single negligent act occurs and its effects linger after discharge; *Feres v. United States*, 340 U.S. 135 [71 S.Ct. 153, 95 L.Ed. 152] (1950), holds that, under some circumstances, this one act is subject to intra-military immunity. Third, the military may commit an intentional act and then negligently fail to protect a soldier turned civilian from the dire consequences which will flow from the original wrong. This Court holds that, under such circumstances, the injured civilian may have a valid claim against the tortfeasors. The later negligence is a separate wrong, a new act or omission occurring after civilian status is attained; the perpetrators of this wrong must be held accountable for their conduct. 471 F.Supp. at 352.

In defendants' third case, *Everett v. United States*, 492 F.Supp. 318 (S.D.Ohio 1980), the wife of a deceased serviceman sued the government claiming that her husband's death by cancer was the result of his being intentionally exposed to

large doses of radiation when he was forced to participate as an Air Force enlisted man in military maneuvers in a nuclear blast area less than one hour after detonation of the nuclear device. Plaintiff argued that her husband's march through the hazardous area was part of an experimental project to test the effects of nuclear radiation. Refusing to dismiss plaintiff's claim of post-discharge negligence, the *Everett* court found that the fact picture "properly falls in the third category" of the *Thornwell* analysis—intentional act incident to service, plus a separate wrong of post-discharge negligence. 492 F.Supp. at 325.

These cases are distinguishable from the facts at bar in several important respects. First, unlike the *Schwartz* case, the post-discharge negligence asserted here is not separate and distinct from the numerous acts of negligence alleged to have occurred incident to plaintiff's service. Schwartz, who sought medical treatment after his discharge, had a predischarge condition that was improperly diagnosed and negligently treated after discharge. That the condition arose due to government installation of the umbrathor in plaintiff's sinus while he was a serviceman does not alter the fact that the governmental negligence occurred, in its entirety, long after plaintiff became a civilian. Unsupported dicta aside, *Schwartz* stands only for the proposition that recovery for negligent performance of post-discharge medical treatment is not barred merely because the original condition arose from medical treatment that is not actionable under *Feres*.

Thus, *Schwartz* properly falls under *Thornwell's* "first case", where "the military performed separate negligent acts (i.e., two improper operations), one before, and one after, discharge". 471 F.Supp. at 352. Here, plaintiff's claim of post-discharge failure to warn does not present a separate and

distinct act of post-discharge negligence on the part of the government. Of course, any veteran in this case who faces a situation analogous to *Schwartz,* that is, who seeks post-discharge medical assistance from the government for an Agent Orange related malady and is negligently treated at a government hospital, may prosecute his claim for negligent treatment without the *Feres* impediment.

Second, unlike the *Thornwell* and *Everett* cases, plaintiffs here do not allege that the government caused them intentional harm by subjecting them to a form of human experimentation. *Thornwell,* joined by *Everett,* emphasized the distinction between cases of predischarge torts that were intentional and those that were negligent:

> Mr. Thornwell * * * does not allege a mere continuing negligent omission [which would be barred by *Feres*]. He claims he was *intentionally* harmed while he was on active duty and he further claims that, after he became a civilian, the defendants failed to exercise their duty of care by neglecting to rescue him from the position of danger which they had created. * * * Mr. Thornwell's claims for in-service, and out-of-service, injuries, certainly involve two distinctly separate patterns of conduct, one intentional and [one] negligent. 471 F.Supp. at 351 (emphasis in original)

Thus, both the *Thornwell* and *Everett* courts were presented with the "third case" in the *Thornwell* analysis, where the military "commit[s] an intentional act and then negligently fail[s] to protect a soldier turned civilian from the dire consequences which will flow from the original [intentional] wrong." 471 F.Supp. at 352. Here, the parties do not dispute that the government's motives in using Agent Orange in southeast Asia were valid military objectives: defoliate jungle growth to deprive enemy forces of

ground cover and destroy enemy crops to restrict enemy's food supplies. Unlike *Thornwell* and *Everett,* plaintiffs here do not allege that the government committed "an intentional act and then negligently fail[ed] to protect [them]", *Thornwell v. United States,* 471 F.Supp. at 352; *Everett v. United States,* 471 F.Supp. at 352; *Everett v. United States,* 492 F.Supp. at 325. Accordingly, the facts at bar do not present the "third case" of the *Thornwell* analysis.

If this case fits within the *Thornwell* analysis at all, it is the "second case", where "a single negligent act occurs and its effects linger after discharge." 471 F.Supp. at 352. Despite all the inconsistencies pervading this difficult area of analysis, "it is clear, at the very least, that a mere act of negligence which takes place while the plaintiff is on active duty and which then remains uncorrected after discharge, is not grounds for suit". *Thornwell v. United States*, 471 F.Supp. at 351.

Plaintiffs' complaints here neither allege nor support a conclusion that the post-discharge failure to warn was sufficiently separate and distinct from the underlying "incident to service" tort claims. Moreover, the *Feres* doctrine bars claims that are not only "incident to service" but also those which, like these, "arise out of" military service. The injuries here alleged are "inseparably entwined" with, and directly related to, plaintiffs' military service, *see Healy v. United States*, 192 F.Supp. 325, 328 (S.D.N.Y.1961), *aff'd on opinion below*, 295 F.2d 958 (C.A.2, 1961); *Kilduff v. United States*, 248 F.Supp. 310, 312 (E.D.Va.1960); 1 Jayson, *Handling Federal Tort Claims* § 155.08[3][b] at 5–124. The important and well established principles of the *Feres* doctrine cannot be circumvented by inventive presentation or artful pleading which attempts to create an actionable post-discharge claim out of what is in reality a claim of con-

tinuing neglect. *See Thornwell v. United States,* 471 F.Supp. at 352.

(c) The Australian Veterans' Claims

The above analysis applies with equal force to the claims of the Australian veterans.[27] The only reported case on point, *Daberkow v. United States,* 581 F.2d 785 (C.A.9, 1978), reached a similar conclusion. There, the claims of a West German serviceman, killed performing duties incident to joint military activity conducted by the United States and West German governments, were held barred under *Feres.* The *Daberkow* court undertook an analysis of the three "*Feres* factors" and concluded that *Feres* applies with equal force to foreign servicemen injured incident to joint military activities because: (1) the scope of the United States government's liability should not depend on the fortuity of the location of any serviceman's duty station, whether that serviceman is an American or foreign serviceman; (2) the foreign government there involved had provided a means of compensating veterans and their families for injuries incident to service; and (3) the possible disruption of military discipline resulting from servicemens' claims is similar whether the serviceman is American or not. 581 F.2d at 788.

Here, the claims of the Australian plaintiffs clearly fall within the *Daberkow* analysis. The Australian plaintiffs concede that their presence in southeast Asia during the period in question was the direct result of their country's participation in joint military operations with the United States, memorandum of Australian plaintiffs at 3, and they acknowledge the existence of a compensation scheme for Australian

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[27] In *McMillan v. Dow,* CV 80-1143 (EDNY GCP), and *Elder v. Dow,* CV 80–1241 (EDNY GCP), 270 plaintiffs, all claiming to have been Australian war veterans who had served jointly with American Forces in Vietnam, seek damages for injuries caused by Agent Orange.

veterans similar to that provided by the United States government. Memorandum of Australian plaintiffs at 8. Moreover, to rule that the United States government has waived sovereign immunity with respect to the tort claims of foreign servicemen but not with respect to the claims of American servicemen would distort the underlying purposes of the FTCA, defy common sense, and almost certainly be contrary to the intent of an elected Congress. Since the court determines that the Australian veterans could not maintain an action directly against the United States, defendants in turn may not maintain their third party action for indemnity or contribution based on any recovery the Australian veterans may obtain from them., *Stencel Aero Engineering Corp. v. United States*, 431 U.S. 666, 97 S.Ct. 2054, 52 L.Ed.2d 665 (1977).

(d) Derivative Claims of Spouses, Parents and Children

Although the *Feres* doctrine does not apply to the servicemen's next of kin insofar as their own direct injuries or deaths are concerned, 1 Jayson, *Handling Federal Tort Claims* § 156 at 5–142 through 5–143 and cases cited therein, *Feres* does bar suits by a serviceman's family for damages resulting from injuries the serviceman suffered incident to service, 1 Jayson, *Handling Federal Tort Claims* § 156 at 5–144, even where the derivative action is technically personal in character (e.g., wrongful death, loss of consortium). *Van Sickel v. United States*, 285 F.2d 87, 91 (CA9 1969). This principle is demonstrated by *Feres* itself, where two of the three suits barred in that decision were wrongful death actions instituted on behalf of widows of servicemen who had died from injuries suffered incident to their service. *Feres v. United States, United States v. Griggs*, 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950). (Deciding appeals from *Feres v. United States*, 177 F.2d 535 (CA2 1949), and *Griggs v. United States*, 178 F.2d 1 (CA10 1949).

Further, application of this rule bars claims of mental anguish suffered by family members, *DeFont v. United States*, 453 F.2d 1239, 1240 (CA1 1972), *cert. denied*, 407 U.S. 910, 92 S.Ct. 2436, 32 L.Ed.2d 684 (1972) (wife's mental anguish over inadequate care provided serviceman husband not separate and distinct claim under *Feres*), and also bars the claims of veterans' spouses who allege damages that actually were the result of harm done to servicemen, *Harten v. Coons*, 502 F.2d 1363, 1365 (CA 10 1974), *cert. denied*, 420 U.S. 963, 95 S.Ct. 1354, 43 L.Ed.2d 441 (1975) (mother of accidentally conceived child cannot recover for negligent vasectomy performed on serviceman husband).

Applying these principles to the case at bar, it is clear that members of the veterans' families may not maintain actions against the United States based on their derivative claims (e.g., loss of society, comfort, companionship, services, consortium, guidance and support), or claims that result from a serviceman's injury (e.g., miscarriage). Accordingly, under the principles of *Stencel Aero*, the defendants may not seek indemnity or contribution from the United States for any liability imposed on them for claims of this nature.

(e) Claims of Direct Injury to Veterans' Children

Only the veterans' children's claim of direct injury requires additional analysis. Here, children of Vietnam veterans allege that they have suffered genetic and somatic injury as a result of a parent having been exposed to Agent Orange. This presents the difficult question of whether the injuries suffered by these children, who are not and never were members of the military, are derivative injuries suffered incident to or arising out of military service", or whether they are direct injuries independent of those of their parents.

The closest precedent is *Monaco v. United States*, No. C 79–0860 (N.D.Cal. Nov. 2, 1979), where plaintiff, the

daughter of a serviceman exposed to radiation during his military service, claimed the government's negligence towards her father caused her to be affected with "chromosomal and genetic change" which in turn resulted in her being born with a birth defect. *Monaco v. United States*, slip op. at 3. There, the court held that [t]he test of *Feres* is whether plaintiff's injuries have as their genesis injuries allegedly sustained incident to the performance of military service", slip op. at 3, and found plaintiff's claim barred under this standard because "[plaintiff's] injuries are directly related to and arise out of the injury sustained by her father at the time he was a member of the United States Army." Slip op. at 4.

In the case at bar, the children's claims of genetic and physical harm are indirect because they arise only as the result of injuries to their veteran parents.[28] The injuries alleged by the children had their genesis in the exposure of their parents and, assuming that Agent Orange could produce the genetic changes alleged, the injuries were inflicted on the serviceman at the time of exposure. Thus, although Agent Orange may ultimately be found to have caused injuries in subsequently conceived children, those injuries, nevertheless, arose out of and were incident to the service of the parent. To hold otherwise might open the door for governmental liability to countless generations of claimants having ever diminishing genetic relationship to the person actually injured.

For these reasons, the court holds that the children's claims for genetic injury and birth defects from Agent

[28] Somewhat analogous is *Harten v. Coons*, 502 F.2d 1363 (CA 10 1974), *cert. denied*, 420 U.S. 963, 95 S.Ct. 1354, 43 L.Ed.2d 441 (1975), where a serviceman and his wife sued the United States for the costs of raising a child accidentally conceived after a negligent vasectomy on the husband. There, the court considered only the damage done to the husband and dismissed the complaint under *Feres* without regard to the wife's claim of independent jury. 520 F.2d at 1364.

Orange exposure of their veteran parents are injuries suffered "incident to and arising out of service" under *Feres* and cannot be recompensed in an action maintained directly against the government. Consequently, the defendants may not seek indemnity or contribution against the United States for any liability they ultimately may incur as a result of these claims. *Stencel Aero Engineering Corp. v. United States,* 431 U.S. 666, 97 S.Ct. 2054, 52 L.Ed.2d 665 (1977).

G. DEFENDANTS' REMAINING CLAIMS AGAINST THE UNITED STATES

Defendants have sought to style the remaining claims of their third party complaints in terms of constitutional deprivation and torts committed directly against them by the United States. This appears to be another exercise in pleading in an attempt to avoid statutory jurisdictional problems because, notwithstanding the defendants' characterizations, these remaining claims against the government are not tort claims; rather, they are essentially contractual in nature and must be so treated.

Congress has conferred on the courts jurisdiction over contract claims that is different from that over tort claims. Under the Tucker Act, 28 U.S.C. § 1491, jurisdiction for any claim founded upon an express or implied contract with the United States is conferred on the Court of Claims, where cases sounding in tort may not be maintained. The United States District Courts have concurrent jurisdiction over contract claims, but only when the claim does not exceed $10,000. 28 U.S.C. § 1346(a)(2). Here, it is beyond dispute that defendants' remaining third party claims against the government involve more than $10,000 that deprives this court of jurisdiction over them. Consequently, the government's motion to dismiss must be granted as to the remaining claims. Of course, dismissal of

defendant's third party claims here is without prejudice to defendants' right to pursue their claims against the government in the proper forum.

H. OTHER CLAIMS OF IMMUNITY

Arguing in the alternative, the United States seeks to dismiss defendants' third party complaints under three statutory exceptions to the FTCA: the combatant exception, 28 U.S.C. § 2680(j) (immunity not waived for "[a]ny claim arising out of the combatant activities of the military * * * during time of war"); the foreign country exception, 28 U.S.C. § 2680(k) (immunity not waived for "any claim arising in a foreign country"); and the discretionary function exception, 28 U.S.C. § 2680(a) (immunity continues for "act or omission of an employee of the government * * * based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of [the government]").

Notwithstanding the apparent application of these exceptions to some of the claims here asserted, the court's determination that the *Feres/Stencel* doctrine operates to bar all tort claims advanced in the third party complaint makes it unnecessary to consider whether these exceptions do apply.

For all these reasons, the government's motion to dismiss the third party complaints is granted, and the third party complaints against the government deemed to have been made in all actions under MDL 381, are dismissed.[29]

[29] Plaintiffs are cautioned that the issues here are, to some extent, novel, and the strong arguments advanced by all parties should make it clear that the views expressed and rulings made in this decision are not entirely free from doubt. Accordingly, any plaintiff who believes that [s]he may have a valid claim against the United States government in the event that one or more of the above rulings are ultimately

III. THE CASE MANAGEMENT PLAN

There have been pending for some time motions by various parties urging the court to make various orders affecting the overall management of this action, including such matters as class action treatment, summary judgment, discovery, and divison of the action into various parts for pretrial and trial purposes. The court has reserved decision on all these motions pending resolution of two major questions that greatly affect how the case might be managed efficiently: (1) whether the United States was to be a party to the action, and (2) whether jurisdiction lies under federal common law or whether the principles and consequences of diversity jurisdiction must be considered. Now that both of these questions have been answered,[30] it

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reversed on an appeal from this court's decision, should protect his/her interests to the greatest extent possible by filing a notice of claim form (Standard Form 95) with the proper agency of the United States government and taking whatever additional steps may be necessary to protect his/her rights.

[30] The first question is answered by the earlier part of this memorandum and order. The second question was answered by a decision and order of the Second Circuit Court of Appeals dated November 24, 1980 (Feinberg, C. J. dissenting) which held that this litigation should not be governed by federal common law, but rather must be controlled by the laws of the several states applied under diversity of citizenship principles. Technically, that question is still open because plaintiffs have filed a petition for en banc consideration by the Second Circuit. In addition, plaintiffs have indicated their desire to have the issues reviewed by the United States Supreme Court. However, enough light has not been shed on the problems to permit substantial progress in the trial court regardless of future actions by the Second Circuit or the Supreme Court. Managing this case under diversity of citizenship principles is by far the more difficult route to travel, but the court feels that it can develop a plan for efficient management even without the aid of federal common law for jurisdiction and for substantive law purposes. If further review of the federal common law issue produces a change, then the remaining work of the court and of all parties will be simplified and the management plan can be easily adapted at that time.

is time to get on with orderly discovery and ultimate disposition of the litigation.

In developing the case management plan described in this section, the court has weighed and considered many problems presented by this litigation. Some of them are:

1. There are a large number of plaintiffs and potential plaintiffs who claim to have been injured by exposure to Agent Orange. There are now approximately 167 suits pending in the Eastern District of New York involving over 3,400 plaintiffs. The court has been informed that there are many thousands more who have, at the court's request and pending decision of the class action motion, refrained from bringing individual actions.

2. There are numerous chemical companies named as defendants.[31] The fact that they may have had differing degrees of involvement in manufacturing and supplying Agent Orange for the government may or may not cause differing levels of responsibility for the effects of Agent Orange on plaintiffs.

3. The present plaintiffs come from most of the 50 states and from Australia. This may require consideration of varying standards of conduct, rules of causation and principles of damages that may substantially affect the results in individual cases.

4. The causation issues are difficult and complex. Clearly this is not the "simple" type of "disaster" litigation such as an airplane crash involving a single incident, having a causation picture that is readily grasped through conventional litigation techniques, and presenting comparatively small variations among the claimants as to the ef-

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[31] *See* footnote 2 *supra*.

fects upon them of the crash. With the Agent Orange litigation, injuries are claimed to have resulted from exposure to a chemical that was disseminated in the air over southeast Asia during a period of several years. Each veteran was exposed differently, athough undoubtedly patterns of exposure will emerge. The claimed injuries vary significantly. Moreover, there is a major dispute over whether Agent Orange can cause the injuries in question, and there are separate disputes over whether the exposure claimed in each case did cause the injuries claimed. The picture is further complicated by the use in Vietnam of other chemicals and drugs that also are claimed to be capable of causing many of the injuries attributed to Agent Orange.

5. The litigation presents numerous questions of law that lie at the frontier of modern tort jurisprudence. Among them are questions of enterprise liabililty, strict products liability, liability for injuries that appear long after original exposure to the offending substances, and liability for so-called genetic injuries.

6. Many of the people exposed to Agent Orange may not even yet have experienced the harm it may cause.

7. Numerous scientific and medical issues are presented, and there are serious questions of whether there is adequate data to reach scientifically sound conclusions about them. There is the further question of whether legally permissible conclusions may nevertheless be reached on data that would not permit "scientific" conclusions.

8. Various agencies of the government have expresed concern but as yet have shown little tangible action about the problems claimed to have been caused by the government's use of Agent Orange.

9. There are important and conflicting public policies

that run as crosscurrents through many phases of both the substantive and procedural problems of this litigation.

10. There is a wide choice available among the many procedural devices that could be used for addressing and ultimately deciding this controversy.

All of these problems are compounded by the practical realities of having on one side of the litigation plaintiffs who seek damages, but who have limited resources with which to press their claims and whose plight becomes more desperate and depressing as time goes on, and having on the other side defendants who strenuously contest their liability, who have ample resources for counsel and expert witnesses to defend them, and who probably gain significantly, although immeasurably, from every delay that they can produce.

Overarching the entire dispute is a feeling on both sides that whatever existing law and procedures may technically require, fairness, justice and equity in this unprecedented controvesy demand that the government assume responsibility for the harm caused our soldiers and their families by its use of Agent Orange in southeast Asia.

Out of these and other problems it is this court's task as the transferee judge in this multidistrict litigation to supervise and manage the action so as to bring it to a "just, speedy and inexpensive determination," Rule 1 FRCP, either in this court, or if that is not possible, then in the transferor courts after completion here of as much of the litigation as may fairly and reasonably be resolved under the supervision of this single judge.

With the foregoing and other problems in mind, the court has considered a variety of possibilities for managing this multidistrict litigation. Each possibility has both advantages and disadvantages. Among the numerous possibilities are the following:

1. Transfer all actions to the Eastern District of New York for trial before this court.

a. Advantages: All parties would know precisely where they stand, and how the action would be handled. There would tend to be consistency in the results to the extent permitted by the varying applicable laws.

b. Disadvantages: Handling the cases would take the full time of this court, which would be able to handle no other cases, a result that would be unfair not only to the other judges in the Eastern District of New York who are already overburdened with one of the heaviest criminal workloads in the nation, but also to other civil litigants in the Eastern District, who would be further delayed in getting their cases to trial. Moreover, to separately try these actions would take far too long a time; probably neither the litigants nor this court would live long enough to see the last case tried.

2. Supervise all discovery, prepare a pre-trial order, and then remand the cases for separate trials in the transferor districts around the country.

a. Advantages: This is by far the easiest course of action for this court to take. In many MDL cases this is an acceptable and proper technique and achieves all of the MDL benefits available to those cases. It accomplishes coordinated discovery, a single plan for processing up through the pretrial order, and a shared workload in the actual trial of the individual actions.

b. Disadvantages: This technique would require separate trials of each action in the transferor courts, a technique that would be repetitious and wasteful with respect to the issues that are common to all actions. Although testimony of key expert witnesses might be made available to each of the transferor courts through use of

videotape so that the need for those witnesses to personally appear at each trial would thereby be eliminated, the opportunity to cross-examine the experts on special problems that relate to the individual plaintiffs would still be lost. The greatest disadvantage of this method is that it would place unnecessary burdens on each of the transferor judges, each of whom would have to struggle with identical legal and factual issues, and it would thus fail to reach the level of judicial efficiency and economy that MDL procedures were designed to achieve.

3. Coordinate discovery and other pre-trial work, consolidate the actions for trial of the common issues of fact and law, and then remand to the transferor districts for separate trials of the individual issues such as specific causation and damages.

a. Advantages: A single trial of common issues has obvious benefits in economy and efficiency. Spreading to other courts the workload of trying individual cases at least makes a judicial solution to this litigation possible in terms of time and workloads.

b. Disadvantages: The consolidation technique addresses only the pending actions, that is, it involves those situations where the plaintiff has seized the initiative and brought suit. However, there are many people with valid claims who for one reason or another have not asserted them by bringing suit and who would therefore not recover for damages inflicted, including damages of which they might not yet even be aware.

4. Certify the litigation as a class action, using all the flexibility of that device, including subclasses, to determine common issues before this court and ultimately determine the individual issues either under the direct supervision of this court or after remand to other courts.

a. Advantages: Class action treatment would give this court full control over the entire litigation. Any determinations reached in the class action would bind all defendants as well as all members of the class except those who chose to opt out, and as to them, their suits could be consolidated for joint trial with the class action. By use of subclasses to be certified as the need later arises, additional trials on issues common to identified subclasses may be conducted either here in the Eastern District of New York, or by the transferor courts after remand, or by a combination of both. This method provides the greatest flexibility and the greatest opportunity for judicial efficiency and economy of time, and money.

b. Disadvantages: The disadvantages with class action treatment lie largely in technical and procedural problems that have arisen with the class action device in other contexts. Such problems have proved particularly troublesome in the context of mass tort cases. Having considered carefully the nature of those technical problems, this court is satisfied that they can be overcome by following the case management plan described in this section and the steps described under the section entitled "Class Action".

After considering the submissions and arguments of the parties and after weighing all of the foregoing and many other considerations, the court has developed the following plan for management of the Agent Orange litigation assigned to it under MDL No. 381:

1. Class action. The Agent Orange litigation will be certified as a class action under F.R.C.P. 23(b)(3). (See discussion below entitled "Class Action").

2. Statutes of limitations. The court will take up immediately the problems of statutes of limitations. (See discussion below entitled Statutes of Limitations").

3. Separate trials of some issues. Whenever common issues are presented, a common trial should be had, if practicable. These trials will be held as promptly as possible in the Eastern District of New York, preserving at all times the parties' right to a jury trial when properly demanded. Plaintiffs have moved for so-called "serial" trials, describing in some detail the issues they would like tried and the order in which they should be tried. Except insofar as plaintiffs' plan is adopted by this decision, that motion is denied. As appears in the discussion below entitled "Summary Judgment" there is an issue that can be separately tried at the threshold of this action: whether the defendants are protected by the "government contract defense". The court intends to try that issue separately. After that, if needed, there may be an additional trial addressing liability questions such as negligence, product liability, and general causation, where a jury will be able to hear all of the evidence relating to the development, manufacture and use of Agent Orange, and the scientific and medical evidence relating to its potential effects, and report its findings in carefully drafted special verdicts. Those special verdicts can then serve as a framework for later disposition of the issues of individual causation (whether a particular veteran was exposed, to what degree, and with what results) and damages. The court has not yet determined whether the individual issues can be best resolved under the direct supervision of this court or by remand of subclass actions to transferor courts for processing in ways appropriate to the circumstances of the subclasses. Those determinations necessarily must be made at a later date.

4. Discovery. Until now the court has stayed all discovery except that conducted voluntarily. That stay will now be lifted, and mandatory discovery shall now proceed according to the plan described in the section below entitled "Discovery".

5. Miscellaneous.

a. Plaintiffs' motion to amend the complaint by adding the United States government and many of its officials on theory of constitutional tort is denied. The issues sought to be raised by plaintiffs through the amendment are sufficiently different from those presented by this already complex litigation to require that the constitutional claims against government officials and the government itself be pursued by one or more separate actions, if plaintiffs are so inclined. Denial of the motion, therefore, is without prejudice to whatever rights plaintiffs may have to assert those claims in separate proceedings.

b. Jurisdiction and pleadings. There is some confusion as to the precise state of the pleadings in the many pending actions. The court has not yet determined what precise dispositon will be made of the various individual actions in light of the class certificaiion. Unless a party files in a particular action a notice disclaiming the benefit afforded by the following, all of the pleadings in all cases now or hereafter filed under MDL 381 are deemed amended as follows:

1. The complaints are deemed amended to allege the residence of the plaintiffs, and to name and allege the residence of each of the defendants whose citizenship is diverse from that of the plaintiff. All plaintiffs are deemed to have joined all diverse defendants as defendants in their individual actions.

2. All defendants are deemed to have answered all complaints brought against them, with general denials plus all affirmative defenses thus far raised in filed answers to any of the Agent Orange MDL cases. All answers are deemed to include crossclaims for indemnification and contribution against all other defendants. All crossclaims are deemed denied.

The court recognizes that (1) any case management plan may have to be changed in order to adapt to new or unforeseen circumstances; (2) not every facet of the plan adopted for this Agent Orange litigation will please everyone; and (3) this litigation presents problems of a type and magnitude that differ substantially from the established precedents so that it cannot proceed in one of the well established patterns for lawsuits. Under these circumstances, it is the court's obligation to control the case, seeking always the goal of a "just, speedy and inexpensive determination" of the litigation.

Lawsuits, of course, must be guided and decided by the principles of substantive law and rules of procedure established by Congress, by the legislatures of the various states, and by the principles of common law where applicable. The rules of procedure, however, are not intended to require rigid adherence to preordained steps; instead, they are standards and requirements to be used, molded and adapted so as to achieve just, speedy and inexpensive determination of lawsuits. Although "speedy" and "inexpensive" are relative terms having almost ironic implications in the context of the Agent Orange litigation, this court is satisfied that the plan described will, with the cooperation of counsel, attain at least a "just" determination of these lawsuits, and will do so at less cost and in less time than would a more conventional approach.

IV. CLASS ACTION

Contending that many of the issues here presented are best determined by class action to avoid duplicitous litigation by the individual members of the proposed class, plaintiffs have moved for a conditional order pursuant to F.R.C.P. 23 permitting the suit to proceed as a class action on behalf of all persons exposed to Agent Orange and various members of their families. Under Rule 23(c)(1) and

23(d), the order would be subject to such later modification as the court may find appropriate and necessary in light of future developments in the case.

Before a class action may be maintained under Rule 23, the action must meet the prerequisites of Rule 23(a) and one set of the alternative requirements of Rule 23(b). Defendants oppose class treatment, but continue to advance some outrageous arguments in the name of advocacy; detracting from whatever valid arguments they might otherwise have, they argue that plaintiffs fail to satisfy even one of the elements necessary under Rule 23. Plaintiffs, equally undiscriminating in their advocacy, argue that *every* element of *every* alternative of Rule 23 is met here.

The court has carefully read and considered the voluminous submissions of the parties and has heard and considered oral arguments of counsel on this issue. After due consideration, the court determines that plaintiffs have demonstrated that a class action is appropriate under Rule 23(b)(3). Accordingly, plaintiffs' motion for conditional class action certification is granted as herein provided. Certain specific findings are required.

A. THE PREREQUISITES OF RULE 23(a)

1. Numerosity

The members of the plaintiff class here are so numerous that joinder of all members of the class in the same action is impracticable. Rule 23(a)(1). Indeed, if the only members of the class were the plaintiffs in the 167 actions now pending in this court, "numerosity" would be satisfied.

2. Commonality

Rule 23(a)(2) states that a class action may only be maintained if "there are questions of law or fact common to the

class." Here, the action raises numerous questions of law *and* fact common to the class. Whatever may be the individual questions relating to the manner and extent of each veteran's exposure to Agent Orange, and relating to the particular effects of Agent Orange on the veteran when considered along with his/her medical history, circumstances, lifestyle and her unique conditions, all of these claims share a common ground when proceeding through the many factual and legal issues relating to the government contract defense, negligency by the defendants, whether Agent Orange was a "defective product", and the many questions embodied in the concept of "general causation". In part, the requirement of commonality is one aimed at determining whether there is a need for combined treatment and a benefit to be derived therefrom. Here the need is compelling, and the benefits are substantial.

3. Typicality

Rule 23(a)(3) requires that in a class action "the claims or defenses of the representative parties [be] typical of the claims or defenses of the class." As already noted, plaintiffs' claims of negligence, products liability and general causation, as well as the defendants' government contract defense are not just "typical" of the entire class, they are identical. In a few areas, such as the rules governing liability and the application of various statutes of limitations, the claims may fall into groups that are "typical", but even there the different groups' claims can be efficiently managed either on a subclass basis or directly by way of separately determining the issues. Although the named plaintiffs for purposes of the class action are yet to be designated, the court is satisfied that out of the extremely large pool available representative plaintiffs can be named who will present claims typical of those of the class. As already indicated, the issues of specific causation and damages will, of course, ultimately require in-

dividual consideration, but until that point in the litigation is reached, a class action appears to be the only practicable means for managing the lawsuit.

4. Adequacy

Rule 23(a)(4) provides that a class action may only be maintained if "the representative parties will fairly and adequately protect the interests of the class." Adequacy of representation depends on the qualifications and interests of counsel for the class representatives, the absence of antagonism or conflicting interests, and a sharing of interests between class representatives and absentees. 7 Wright & Miller *Federal Practice and Procedure* §§ 1765–1769 at 615–657. Here, the court will select from among the hundreds of plaintiffs representative persons who have a substantial stake in the litigation, who lack conflicts, antagonisms or reasons to be motivated by factors inconsistent with the motives of absentee class members, and who will fairly and adequately protect the interests of the class. Further the class will be represented by experienced, capable counsel, Yannacone and Associates,[32] who have shown themselves willing to undertake the considerable commitment of time, energy and money necessary for the vigorous prosecution of the claims here asserted.

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[32] Yannacone and Associates is a consortium of lawyers who have banded together for purposes of this lawsuit under the leadership of Victor Yannacone, who brought the initial actions and who was designated as lead counsel for the plaintiffs shortly after the cases were transferred to this court by the multidistrict panel. Some of the lawyers in the consortium represent plaintiffs in one or more of the component Agent Orange actions; others apparently have been brought into the group because of special expertise and experience. This case is too complex and too demanding for any single attorney to handle it on behalf of plaintiffs. Yannacone and Associates has already demonstrated that the combined efforts of its twenty or so members will fairly and adequately protect the interests of the class and that together they have the expertise and desire to prosecute this demanding action properly.

5. Additional Requirements

Courts have implied two additional prerequisites to class action certification that are not specifically mentioned in Rule 23: (1) there must be an identifiable class, and (2) the class representatives must be members of the class. 7 Wright and Miller *Federal Practice and Procedure* §§ 1760, 1761 at 579–592. Here, the plaintiff class can be readily identified; they are persons who claim injury from exposure to Agent Orange and their spouses, children and parents who claim direct or derivative injury therefrom. The court has intentionally defined the class in broad terms consistent with the demands of this litigation. If we begin with the broadest possible class, the issues common to all members of that class can be resolved. It may later prove advantageous to create subclasses for various purposes, *e.g.*, for resolving statute of limitations claims, for determining liability in "negligence" as opposed to "product liability" states, and finally, perhaps, for preserving the class action format prior to remand to the transferor judges so as to provide them with the greatest possible flexibility in ultimately determining the issues remaining after multidistrict treatment has ended.

THE REQUIREMENTS OF RULE 23(b)

Plaintiffs seek certification of a plaintiff class under Rule 23(b)(1)(A), (b)(1)(B), (b)(2) & (b)(3).[33] For the reasons set

[33] Rule 23(b) provides that an action may be maintained as a class action if the prerequisites of subdivision (a) are satisfied, and in addition:

(1) the prosecution of separate actions by or against individual members of the class would create risk of

(A) inconsistent or varying adjudications with respect to individual members of the class which would establish incompatible standards of conduct for the party opposing the class, or

(B) adjudications with respect to individual members of the class which would as a practical matter be dispositive of the interests of the

forth below, however, the court concludes that class certification is appropriate only under Rule 23(b)(3).

1. Rule 23(b)(1)

Rule 23(b)(1), the "prejudice" class action provision, authorizes class action treatment if some prejudice would result to any party if members of the class were required to litigate their claims in a series of individual actions, and the resulting prejudice can be obviated by using a class action. The provision is broken down into two separate clauses.

Rule 23(b)(1)(A) authorizes a class action when the prosecution of separate actions would create a risk of "inconsistent or varying adjudications with respect to individual members of the class which would establish incompatible standards of conduct for the party opposing the class". This section focuses on the difficulties that class action certification may visit on the party opposing the class action. It is designed to prevent situations in which different courts establish "incompatible standards of conduct" for that party.

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other members not parties to the adjudications or substantially impair or impede their ability to protect their interests; or

(2) the party opposing the class has acted or refused to act on grounds generally applicable to the class, thereby making appropriate final injunctive relief or corresponding declaratory relief with respect to the class as a whole; or

(3) the court finds that the questions of law or fact common to the members of the class predominate over any questions affecting only individual members; and that a class action is superior to other available methods for the fair and efficient adjudication of the controversy. The matters pertinent to the findings include: (A) the interest of members of the class in individually controlling the prosecution or defense of separate actions: (B) the extent and nature of any litigation concerning the controversy already commenced by or against members of the class; (C) the desirability or undesirability of concentrating the litigation of the claims in the particular forum; (D) the difficulties likely to be encountered in the management of a class action.

Rule 23(b)(1)(A) is *not* meant to apply, however, where the risk of inconsistent results in individual actions is merely the possibility that the defendants will prevail in some cases and not in others, thereby paying damages to some claimants and not others. *McDonnell Douglas Corporation v. United States District Court, Central District of California*, 523 F.2d 1083, 1086 (CA9 1975), *cert. denied sub nom., Flanagan v. McDonnell Douglas Corporation*, 425 U.S. 911, 96 S.Ct. 1506, 47 L.Ed.2d 761 (1976). "The risk of paying money [damages] to some and not others is not what the rulemakers intended by the words 'incompatible standards of conduct'". A. Miller, *An Overview of Federal Class Actions: Past, Present and Future* at 43 [1977]. Since the only effect of inconsistent decisions here would be the payment of damages to some claimants and not others, class certification under Rule 23(b)(1)(A) would be inappropriate.

Rule 23(b)(1)(B) authorizes a class action when separate actions would create a risk of "adjudications with respect to individual members of the class which would as a practical matter be dispositive of the interest of the other members not parties to the adjudications or substantially impair or impede their ability to protect their interest." This rule emphasizes possible undesirable effects on the class members, rather than on the opposing party, and permits a class action if separate suits might have undesirable effects on the class members. "The paradigm Rule 23(b)(1)(B) case is one in which there are multiple claimants to a limited fund * * * and there is a risk that if litigants are allowed to proceed on an individual basis those who sue first will deplete the fund and leave nothing for the late-comers." A. Miller, *An Overview of Federal Class Actions: Past, Present and Future* at 45 (1977). *See also Administrative Committee's Note, Rule 23*, 39 F.R.D. 69, 101 (1966).

However large the potential damages may appear here, plaintiffs offer no evidence of the likely insolvency of defendants and apparently do not, in defendant Dow's words, "have the temerity to argue that the aggregate claims of the purported class exceed the total assets of the five named defendants."[34] Defendant Dow's memorandum in opposition to class certification at 20. For good measure, Dow adds "[s]uch an argument would be ludicrous on its face." *Id.* As one court has noted, "without more, numerous plaintiffs and a large *ad damnum* clause should [not] guarantee (b)(1)(B) certification." *Payton et al. v. Abbott Labs et al.*, 83 F.R.D. 383, 389 (D.Mass. 1979). Thus, certification under Rule 23(b)(a)(B) is not appropriate.

2. Rule 23(b)(2)

Rule 23(b)(2) authorizes class action treatment where "the party opposing the class has acted or refused to act on grounds generally applicable to the class, thereby making appropriate final injunctive relief or corresponding declaratory relief with respect to the class as a whole." This subdivision "does not extend to cases in which the appropriate final relief relates exclusively or predominately to money damages", *Advisory Committee's Note, Rule 23*, 39 F.R.D. 69, 102 (1966); rather, it applies when injunctive relief or declaratory relief on which injunctive relief could be based is proper. *Eisen v. Carlisle & Jacquelin*, 391 F.2d 555, 564 (CA2 1968), *vacated on other grounds*, 417 U.S. 156, 94 S.Ct. 2140, 40 L.Ed.2d 732 (1974). Here, the relief re-

[34] Since that statement was made the number of named defendants has increased, *see* footnote 2 *supra*, thus rendering class certification under Rule 23(b)(1)(B) even more inappropriate.

quested relates predominantly to money damages so the class may not be certified under Rule 23(b)(2).[35]

3. Rule 23(b)(3)

Rule 23(b)(3) authorizes a class action when the court finds "that the questions of law or fact common to the members of the class predominate over any questions affecting only individual members, and that a class action is superior to all other available methods for the fair and efficient adjudication of the controversy." The rule lists four matters pertinent to a consideration of these issues: "(A) the interest of members of the class in individually controlling the prosecution or defense of separate actions; (B) the extent and nature of any litigation concerning the controversy already commenced by or against members of the class; (C) the desirability or un-desirability of concentrating the litigation of the claims in the particular forum; (D) the difficulties likely to be encountered in the management of a class action."

Considering the circumstances of this action, and bearing in mind the manner in which the class action will proceed, the court determines that the interest of class members in individually controlling the prosecution of separate actions is minimal, especially at this early stage of the litigation when the issues under consideration concern the relationship between the defendants and the government, issues that impact equally on every plaintiff's claim. Rule 23(b)(3)(A). Later stages of this litigation, especially those concerned with individual causation and damages, may require reconsideration of this element and possibly decertification, but at this stage,

[35] The court is aware that plaintiffs have requested that a trust be established to apply defendants' future profits for the benefits of the plaintiff class. While this possible relief has not been excluded from the case, it does not serve as a sufficient basis for class certification pursuant to F.R.C.P. 23(b)(2).

individual class members have almost no interest in individually controlling the prosecution of separate actions. Indeed, the problems inherent in every one of the individual actions are so great that it is doubtful if a single plaintiff represented by a single attorney pursuing an individual action could ever succeed.

With respect to the extent and nature of currently pending litigation, almost all the Agent Orange litigation currently pending is before this court under the multidistrict litigation procedures. All those cases are advancing simultaneously, and certification of a class action will serve the goals of judicial economy and reduce the possibility of multiple lawsuits. Rule 23(b)(3)(B). In addition, it will signficantly expedite final resolution of this controversy.

With respect to the desirability of concentrating the litigation of the claims in this forum, the actions have already been concentrated before this court through the use of MDL procedures. Allowing it to proceed as a class action will minimize the hazards of duplicate efforts and inconsistent results. Moreover, given the location of present counsel and the widely varying citizenships of the interested parties, this court is as appropriate a place to settle the controversy as any. Rule 23(b)(3)(C).

With respect to the difficulties likely to be encountered in the management of a class action, the court has carefully and humbly considered the management problems presented by an action of this magnitude and complexity, and concluded that great as they are, the difficulties likely to be encountered by managing these actions as a class action are significantly outweighted by the truly overwhelming problems that would attend any other management device chosen. While the burdens on this court might be lessened by denying class certification, those imposed collectively on the transferor courts

after remand of the multidistrict cases would be increased many times.

Having carefully considered the above factors and all other circumstances of this action, the court is satisfied that at this time the questions of law and fact common to the members of the class predominate over questions of law or fact affecting only individual members, and that a class action is superior to any other available method for the fair and efficient adjudication of the controversy.[10]

Because over a year ago this court requested plaintiffs not to file actions pending decision on the class action motion, because the facts and issues in all of the pending and future cases are to a great degree identical, or at least parallel, and because this action presents a variety of questions in relatively untested areas of the law, this court sees the objectives of F.R.C.P. Rule 1 and Rule 23, as well as the interests of justice, best served by determining here, and for all parties, as many legal and factual issues as may properly be decided. To achieve those ends the court will certify this to be a class action under F.R.C.P. 23(b). Formal certification will be by separate order to be processed under the court's instructions.

C. NOTICE

Rule 23(c)(2) states that "In any class action maintained under subdivison (b)(3), the court shall direct to the members of the class the best notice practicable under the circumstances, including individual notice to all members who can be identified through reasonable effort."

Two problems with notice must be considered: how the notice shall be given and what the notice shall say. In the

[10] There being no need to certify subclasses of plaintiffs at this time, the court will postpone consideration of the subclass issues to a later time when the most efficient and logical course to follow will be clearer.

order to be prepared and signed which will officially certify the class, the court will direct both the manner and content of notice.

As to the manner of notice, both the rule and the court decisions display a preference for individual notice whenever possible, and ordinarily the financial burden of giving notice falls on the plaintiffs. Individual notice to all members of the broad class to be certified may be impossible. The rule requires, however, only "the best notice practicable under the circumstances". Counsel are invited to submit suggestions in writing as to how "the best notice practicable" may be given to the over two million Vietnam veterans and their families who are included in the class by January 23, 1981. Certain possibilities have already been suggested, including having the Veterans Administration mail copies of the notice to all Vietnam veterans on their mailing list, and soliciting the aid of veterans' organizations around the country to circularize their memberships.

It may be that other persons or organizations are willing to assist in resolving the notice problem. The news media in particular might volunteer space or time to assure "the best notice practicable" to veterans and their families. Still other means by which the notice requirement can be fairly and reasonably fulfilled may exist. After considering all suggestions received by January 23, 1981, the court will determine how notice shall be given.

As to the form of notice, Yannacone and Associates is directed to serve and file by January 7, 1981 a proposed form of notice which shall include at least the following information in as simple and direct a form as possible:

1. It shall state briefly the nature of plaintiffs' suit, their causes of action and their claims for relief.

2. It shall set out the definition of the plaintiff class and in general terms the issues that will have to be determined.

3. It shall notify the recipient that at his/her request the court will exclude him/her from the class so long as the request is received by a date specified in the notice that counsel and the court will set. Rule 23(c)(2)(A).

4. It shall make clear that any findings, whether favorable or not, will be binding on all class members who do not request exclusion. Rule 23(c)(2)(B).

5. It shall explain that any class member who does not request exclusion may enter an appearance through his/her counsel. Rule 23(c)(2)(C).

Counsel for defendants shall meet on or before January 16, 1981 to discuss and, if possible, agree upon suggested modifications to plaintiffs' proposed form of notice and serve and file their suggested changes, if any, with the court by January 23, 1981. To the extent that agreement among defense counsel is not possible, they may make separate submissions.

By January 16, 1981 Yannacone and Associates shall submit to the court a list of no more than 12 persons whom they propose as representative plaintiffs for the class action. Defendants may, if they choose, submit any comments, objections or suggestions with respect to the proposed representative plaintiffs by January 23, 1981. The court will then determine who will be the named plaintiffs in the class action, and plaintiffs' attorneys will be directed by further order of this court to prepare an appropriate class action order and class action complaint.

V. SUMMARY JUDGMENT

On this motion, defendants argue that they are entitled to summary judgment against plaintiffs because, acting under

compulsion of federal law, they were forced to manufacture Agent Orange under circumstances carefully controlled by the government. Cases analyzing similar arguments have utilized various terminology to describe this defense, the most common being that defendants seek to "share in the government's immunity", *Green v. ICI America, Inc.*, 362 F.Supp. 1263, 1264 (E.D. Tenn.1973), or that defendants assert a "government contract defense". *See Merritt, Chapman & Scott Corporation v. Guy F. Atkinson Company*, 295 F.2d 14, 16 (CA9 1961).

A. THE GOVERNMENT CONTRACT DEFENSE

Whatever its label, the government contract defense[37] in this case essentially seeks to avoid manufacturer liability on the ground that the circumstances surrounding Agent Orange's manufacture and use were controlled and dictated by the United States government acting in a capacity in which the government is protected from liablity by sovereign immunity and the *Feres/Stencel* doctrine.

In the seminal case of *Yearsley et al. v. W.A. Ross Construction Company*, 309 U.S. 18, 60 S.Ct. 413, 84 L.Ed. 554 (1940), the Supreme Court recognized the possibility that contractors who properly perform their work pursuant to contracts with the United States government might avoid liaiblity for injuries resulting from the work done. Plaintiff, who sought to recover damages for erosion of his waterfront property caused by defendant's construction of dikes in the Missouri River, conceded that defendant had acted "pursuant to a contract with the United States Government, under the direction of the Secretary of War and the supervision of the Chief of Engineers of the United States, for the purpose of improving navigation of the Missouri River." 309 U.S. at 19, 60

[37] For purposes of convenience this defense will be called the "government contract defense" for the remainder of this decision.

S.Ct. at 414. The Court held that the contractor was not liable, because the work done had been properly authorized and properly performed. Summarizing the relevant principles, the Court stated

> [I]t is clear that if [the] authority to carry out the project was validly conferred * * there is no liability on the part of the contractor for executing [the government's] will. (citations omitted). Where an agent or officer of the Government purporting to act on its behalf has been held to be liable for his conduct causing injury to another, the ground of liability has been found to be either that he exceeded his authority or that it was not validly conferred. 309 U.S. at 20–21, 60 S.Ct. at 414.

Following these principles, subsequent cases have stated the rule in various ways:

> To the extent that the work performed by [the contractor] was done under its contract with the [government], and in conformity with the terms of said contract, no liablity can be imposed upon it for any damages claimed to have been suffered by [plaintiffs]. *Myers v. United States*, 323 F.2d 580, 583 (CA9 1963); The [contract work] was pursuant to validly conferred authority under a contract [with the government]. The question of foreseeability of harm and the possible need to protect against it arose when the Government framed its terms. There is no charge that what the contractor did was not what it was required to do. * * [The question of taking measures to safeguard against harm caused by the plans] was a decision which rested with the Government. The Government did not provide for such additional precautions in the plans,

> and the [contractor] is not to be held liable for this omission. *Dolphin Gardens, Inc. v. United States*, 243 F.Supp. 824, 827 (D.Conn.1965);
>
> Where the act, or failure to act, which causes an injury is one which the [government] contractor was employed to do, and the injury results not from the negligent manner of doing the work, but from the performance thereof or failure to perform it at all, the contractor is entitled to share the immunity from liability which the public enjoys, but * * * the contractor is not entitled to the immunity of the public body from liability where the injury arises from the tortious manner of performing the work."*Green v. ICI America, Inc.*, 362 F. Supp. 1263, 1265 (E.D.Tenn.1973) *quoting* 9 A.L.R.3d 382, 385 (1966).[38]

Behind this rule lie considerations of fairness and public policy. First, tort liability principles properly seek to impose liability on the wrongdoer whose act or omission caused the injury, not on the otherwise innocent contractor whose only role in causing the injury was the proper performance of a plan supplied by the government. The imposition of tort liability on a wrongdoer can have a strong prophylac-

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[38] *See also Merritt, Chapman & Scott Corp. v. Guy F. Atkinson, Company*, 295 F.2d 14, 16 (CA9 1961) ("where the plans and specifications were drawn and adopted *prior* to the contract * * * the contractor is entitled to follow such plans and specifications, exercising due and proper care and skill, and require parties damaged to look to the government, which has required such a contract, for relief.") (emphasis in original); *O'Grady v. City of Montpelier*, 474 F.Supp. 186 (D.Vt. 1979), *rev'd on other grounds*, 573 F.2d 747 (CA2 1978) (no action lies against contractor who entered contract with city, performed work in accordance with detailed specifications provided by the city, did not act outside scope of authority, and performed work in non-negligent manner).

tic effect; tortfeasors held liable for damages that flow from their wrongdoing have a strong incentive to prevent the occurrence of future harm. *See* W. Prosser, *Law of Torts* § 4 at 23 (4th ed. 1971). Before any societal benefit can be derived from the deterrent effects of tort liability, however, the party in a position to correct the tortious act or omission must be held accountable for the damages caused and thus motivated to prevent future torts.

Second, the policy considerations that lend continuing vitality to governmental immunity argue for "extension" of that freedom from liability to some government contractors. As one court put it:

> To impose liability on the contractor [for the government's planning failures] would render the Government immunity * * * meaningless, for if the contractor was held liable, contract prices to the Government would be increased to cover the contractor's risk of loss from possible harmful effects of complying with decisions of [governmental] officers authorized to make policy judgments. *Dolphin Gardens, Inc. v. United States*, 243 F.Supp. 824, 827 (D.Conn.1965).[39]

These considerations take on increased significance when the government contracts with manufacturers of military ordnance in war time. Where, as here, manufacturers claim

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[39] This may even understate the effect of imposing liability on government contractors so situated, because those contractors would presumably seek to insure against possible liability for the government's inadequacies and insurance companies do not spread the risk of loss without some financial benefit to themselves. If taken to the extreme, the government might ultimately find it less expensive to waive immunity under the circumstances, accept liability for injuries caused by its planning failures, and thereby avoid the expensive middleman.

to have been compelled by federal law to produce a weapon of war without ability to negotiate specifications, contract price or terms, the potential for unfairly imposing liability becomes great. Without the government contract defense a manufacturer capable of producing military goods for government use would face the untenable position of choosing between severe penalties for failing to supply products necessary to conduct a war, and producing what the government requires but at a contract price that makes no provision for the need to insure against potential liability for design flaws in the government's plans.

A recent New York State court decision, *Casabianca v. Casabianca,* 104 Misc.2d 348, 428 N.Y.S.2d 400 (S.Ct. Bronx County 1980), recognized the problem of a manufacturer who provides products necessary to conduct a war under contract with the government. In *Casabianca* the court held that, as a matter of public policy, a manufacturer who supplies equipment to the United States Army in a time of war pursuant to government specifications may not be held liable for any inadequacy in the plans because

> A supplier to the military in time of war has a right to rely on such specifications and is not obligated to withhold from the United States armed forces material believed by the latter to be necessary because the manufactuer considers the design to be imprudent or even dangerous. His conformance, under such circumstances, to the specifications provided to him should be, and is, a complete defense to any action based on design, whether faulty or not. *Casabianca v. Casabianca*, 104 Misc.2d 348, 428 N.Y.S.2d 400, 401–402 (S.Ct. Bronx County 1980) (Stecher, J.).

Although some courts ignore or deny its existence,[40] the Supreme Court's recognition of the defense in *Yearsley v. W. A. Ross Construction Company* and the application of the defense in numerous other decisions certifies its continuing viability.[41]

B. THE POSITIONS OF THE PARTIES

As defendants would apply the government contract defense here, plaintiffs' claims against the corporate defendants could not be actionable because the United States Government (1) invented Agent Orange, (2) experimented with herbicides for military use for over 20 years; (3) knew dioxin would be a byproduct of the manufacture of 2,4,5–T, an ingredient in Agent Orange; (4) knew the toxicity of dioxin as early as 1962; (5) compelled the defendants to manufacture Agent Orange using the mandatory provisions of the Defense Production Act, 50 U.S.C.App. § 2061 *et seq.*, and various economic and "informal" pressures to coerce defendants; (6) refused to allow defendants to produce phenoxy herbicides for their civilian markets; (7) unilaterally determined the terms and specifications of the contracts under which the defendants manufactured Agent Orange, including complete control over the chemical composition, volume, weight, purity, acidity, appearance, quality, inspection, testing procedures, packaging, marking and method of shipment used; (8) visited defendants' plants regularly to conduct inspections and tests to ensure the defendants' compliance with the contract terms; (9) assured the availability to defendants of the

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[40] *See Foster v. Day & Zimmerman, Inc.*, 502 F.2d 867, 873–74 (CA8 1974); *Whitaker v. Harvell-Kilgore Corp.*, 418 F.2d 1010, 1013–15 (CA5 1969).

[41] *See e.g., A.J. Myers v. United Stsates*, 323 F.2d 580, 583 (CA9 1963); *Meritt. Chapman & Scott Corp. v. Guy F. Atkinson Company*, 295 F.2d 14, 16 (CA9 1961).

raw materials needed to produce Agent Orange on a high priority basis; (10) unilaterally determined the nature and extent of the use in southeast Asia of the Agent Orange produced, with concentrations of component herbicides far in excess of any commercially manufactured product; and (11) exercised exclusive control over the use of Agent Orange in southeast Asia.

Defendants argue (1) that they merely manufactured and supplied Agent Orange to the government pursuant to validly authorized contracts, (2) that Agent Orange was not manufactured before and has not been manufactured since; (3) that they completed their compelled manufacture of Agent Orange in strict compliance with the specifications supplied by the government, specifications that contained no obvious or "glaring" defects that would have alerted the defendants of any impending danger in following them; and (4) that they manufactured Agent Orange without any negligence on their part.

In short, the defendants claim to have served their country's military needs without any shortcomings in their performance. They contend that but for the government's decision to use Agent Orange in southeast Asia the defendants would not have manufactured Agent Orange and the harm claimed to have been caused by the herbicide would never have occurred. Defendants further note that they were in no position to question the government's military judgment to use the herbicide as a tactical weapon during the Vietnam war, and had no choice under federal law but to comply with the government's order to produce Agent Orange.

Thus, defendants argue that they were merely agents of the government acting under the compulsion of federal law in patriotic furtherance of the Vietnam war effort. They claim to have produced an effective product that met, in every re-

spect, the government's detailed specifications and expectations. Defendants argue that well established legal principles, sound social policy, and general principles of fairness dictate that they not be held liable for injuries resulting solely from their strict compliance with government contracts for war related products that performed exactly as expected in their military uses.

Plaintiffs argue (1) that defendants should not be permitted to "hide" behind government specifications to avoid liability, and (2) that summary judgment is inappropriate because the defendants' "bald assertion that the [government] specifications were, in fact, complied with" cannot be accepted by the court as true without a trial to determine whether defendants' allegations with respect to the government contract defense are factually correct.

C. SUMMARY JUDGMENT DENIED

The standards for consideration of a motion for summary judgment pursuant to F.R.C.P. 56 are well established and need not be repeated here except to note that on a motion for summary judgment the court "cannot try issues of fact; it can only determine whether there are issues to be tried", *American Manufacturers Mutual Insurance Company v. American Broadcasting-Paramount Theatres, Inc.*, 388 F.2d 272, 279 (CA2 1967), *cert. denied*, 404 U.S. 1063, 92 S.Ct. 737, 30 L.Ed.2d 752 (1972) and the court "must resolve any doubts in favor of the party opposing the summary judgment motion". *SEC v. Research Automation Corp.*, 585 F.2d 31 (CA2 1978).

Having considered all the authorities cited and the arguments of counsel, the court is satisfied that a government contract defense exists and has possible application to the facts at bar. Plaintiffs are correct, however, to the extent that they argue the presence of fact issues which preclude sum-

mary judgment since any application of the government contract defense in this context will require that defendants prove that their relationship with the government and performance under the government contract was essentially as they describe it. In short, whatever the minimum showing necessary to support a finding for defendants on the government contract defense may be, allegations with respect to their contract performance and relationship with the government present issues of fact requiring trial.

Resolution of the fact issues by separate trial will determine whether defendants have a complete defense to the claims asserted against them. This is the reason the court has chosen the government contract defense for the Phase I trial as discussed in section III above. The elements of the defense will be uniquely adapted to consideration and adjudication, separate and apart from the issues of liability, causation and damages. As a practical matter, discovery as to these discrete issues will be rather narrow compared to the discovery that some of the other fact issues presented by this action may require.

Although satisfied that the government contract defense exists and has possible application here, however, the court is not satisfied that the parties have sufficiently focused their attention on the precise standards applicable and the specific facts defendants need to prove to make out the defense under the circumstances of this action.[42] Accordingly, the parties

[42] For example, some courts view the government contract defense as coupling the government's sovereign immunity with the contractor's obligation to follow the government's directions, *see Green v. ICI America, Inc.*, 362 F.Supp. 1263, 1265 (E.D.Tenn.1973). It may well be that the sovereign's immunity from suit is not an essential element of the defense. *See Dolphin Gardens, Inc. v. United States*, 243 F.Supp. 824, 827 (D.Conn.1965); *A.J. Myers v. United States*, 323 F.2d 580, 583 (CA9 1963). Similarly, other courts frame the elements of the defense in terms

are to prepare (1) briefs focusing on this issue, and (2) proposed special verdicts to be presented to the jury in the Phase I trial. Of course, the proposed special verdicts will not be binding at this stage, rather they are to assist counsel and the court in focusing upon the issues that require discovery and trial in Phase I. These items are to be served and filed by January 23, 1981. The court will hear argument on the standards and elements of the government contract defense applied to this case and will discuss the proposed special verdicts at the pretrial conference to be held January 30, 1981 at 9:00 a.m.

As noted above, the court believes that early resolution of this potentially dispositive issue will serve the interests of justice and judicial efficiency. Although justice is always served by the efficient management of any action, this is especially true in this case where any other procedure adopted might subject the parties to years of discovery and trial only to have later generations of judges, lawyers, and litigants discover that an early trial of the government contract defense might have preempted the need for almost all of the discovery undertaken and saved thousands of person-hours and millions of dollars associated with those unnecessary efforts. The parties here are entitled to have this action handled as efficiently and expeditiously as possible and, in the court's considered view, the approach here outlined balances the numerous interests in a way that will best serve those goals.

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of military necessity. *See Casabianca v. Casabianca*, 104 Misc.2d 348, 428 N.Y.S.2d 400, 401–402 (S.Ct. Bronx County 1980) (Stecher, J.). Whether these elements are essential to the successful assertion of the government contract defense, however, need not be determined because the court has determined that the sovereign is immune under the circumstances here presented, *see discussion* Section II *supra*, and it is beyond dispsute that the Agent Orange produced by defendants here was manufactured in time of war.

VI. DISCOVERY

Under the case management plan set forth in section III of this pretrial order, it is appropriate for discovery to proceed now as efficiently and expeditiously as possible on all Phase I issues. Most of the material necessary to support the defendants' government contract defense is in defendants' own control. Plaintiffs have continually urged an early trial, and lead counsel has repeatedly represented to the court that depositions of a limited number of Dow employees are the only discovery necessary before proceeding to trial. Although the government is no longer a party to this action, the Department of Justice has promised the court cooperation with all parties in facilitating full and complete discovery of all material within the government's control.

To date, very little discovery has taken place. By practice and procedure order dated May 18, 1979, this court stayed all discovery proceedings until further court order; by order dated February 5, 1980, this stay was modified to allow the parties to "conduct voluntary discovery by agreement among themselves". In addition to whatever voluntary discovery has taken place, the court on specific motions has permitted the depositions of certain plaintiffs with a "high risk of unavailability for trial" to be taken. *E.g., Hartz v. Dow Chemical Company,* 79 C 2752 (EDNY GCP) (memorandum and order of January 18, 1980).

The first wave of Phase I discovery is to commence immediately, and the stay is vacated, but only for this purpose. The first wave of discovery, as defined in § 1.50 of the Manual for Complex Litigation, is designed to disclose all preliminary matters necessary before proceeding to discovery on the merits, specifically:

> (1) the names and location of witnesses whose written interrogatories or depositions upon oral in-

> terrogatories may be sought on the merits; (2) the existence, location and custodian of documents and other physical evidence, the production of which may be sought on the merits; and (3) information concerning the transactions upon which the claims for relief are based.

The parties are directed to serve and file first wave interrogatories by January 15, 1981. Any objections to these interrogatories shall be served and filed on or before January 23, 1981. Defendants shall confer and submit joint interrogatories and objections. Failure to timely object will operate as a waiver of any and all objections. The objections will be discussed and ruled on at the conference scheduled for January 30, 1981. The court does not anticipate frivolous objections to any interrogatories, but any objections made without a good faith basis will be summarily denied as well as subject their proponent to sanctions. The answers to all first wave interrogatories are to be served and filed by February 13, 1981.

The court has previously received and reviewed several suggestions for orderly discovery advanced by the parties. However, those proposals were made without the benefit of the court's case management plan. Counsel are to submit memoranda outlining their thoughts and proposals for the remainder of Phase I discovery by Janaury 23, 1981. Proposals should focus on the scope and type of material to be discovered, as well as the sequence and timing that discovery should take. Those proposals should have as their goal the expeditious, free and open exchange of information contemplated by the Federal Rules of Civil Procedure and required by this court in all cases before it. At the January 30, 1981 conference the court will hear argument about the various proposals and soon thereafter will establish a comprehensive discovery and trial schedule to govern the remainder of Phase I.

VII. STATUTES OF LIMITATIONS

In light of the Second Circuit's decision that federal question jurisdiction is inappropriate in the context of this action, *In re Agent Orange,* 2 Cir., 635 F.2d 987 (1980), diversity jurisdiction under 28 U.S.C. § 1332 may provide the sole basis for subject matter jurisdiction. Since federal courts sitting in diversity apply state law on questions involving the statute of limitations, *Guarantee Trust Company of New York v. York,* 326 U.S. 99, 109, 65 S.Ct. 1464, 1469, 89 L.Ed. 2079 (1945), and since this action will ultimately involve the statute of limitations of most, if not all, of the states, counsel shall submit briefs setting forth the applicable law of each state on the subject. Even if the pending petition for rehearing before the Second Circuit en banc is granted and federal question jurisdiction is ultimately determined to be a valid ground for subject matter jurisdiction, this survey would be helpful, even necessary, in determining what the federal common law is or should be. The briefs shall be served and filed by January 30, 1981, and reply briefs, if necessary, shall be served and filed by February 6, 1981.

VIII. CONCLUSIONS

Government's Motion to Dismiss:

The government's motion to dismiss is granted, and the third party complaints against the government deemed to have been made in all actions under MDL 381 are dismissed.

Case Management Plan:

The case will be tried in "phases" and in accordance with the procedures and principles outlined above in the section of this order entitled "The Case Management Plan".

Plaintiffs' Motion for "Serial Trials":

Plaintiffs' motion for serial trials is denied except insofar as the case management plan adopted by the court incorporates the suggestion to use "phased" trials. The denial of the motion is without prejudice to renewal at some future date when the court may seek additional input as to the future course of this litigation.

Plaintiffs' Motion to Amend the Complaint:

Plaintiffs' motion to amend the complaint by adding the United States government and many of its officials on a theory of constitutional tort is denied without prejudice to the commencement of a separate action.

Class Action:

Plaintiffs' motion for class action certification is granted to the extent of conditional class action certification pursuant to F.R. C.P.23(b)(3). In all other respects the motion is denied. In addition:

> By January 23, 1981 counsel are to submit their suggestions as to how "the best notice available" may be given to the members of plaintiff class.
>
> By January 7, 1981 counsel for plaintiffs shall serve and file a proposed form of notice. Counsel for defendants shall meet by January 16, 1981 to discuss and, if possible, agree upon suggested modifications to the proposed notice. Defendants' suggested modifications, if any, shall be served and filed by January 23, 1981.
>
> By January 16, 1981 counsel for plaintiffs shall submit a list of no more than 12 persons as proposed class representatives. By January 23, 1981 defendants shall serve and file any suggestions, ob-

jections or comments they have with respect to the proposed representative plaintiffs. At the January 30, 1981 conference the court will determine who the named plaintiffs will be.

Defendants' Motion for Summary Judgment:

Defendants' motion for summary judgment is denied because the defendants' assertion of the government contract defense presents fact issues requiring trial. In addition:

> By January 23, 1981 the parties are to serve and file (1) briefs focusing on the precise standards applicable and the specific facts defendants need to prove in order to successfully establish the government contract defense, and (2) proposed special verdicts to be presented to the jury in the Phase I trial. The court will hear argument on the standards and elements of the government contract defense as applied to this case and will discuss the proposed special verdicts at the pretrial conference to be held January 30, 1981.

Discovery:

The stay of discovery previously imposed is vacated to the extent that the parties are to engage in first wave discovery of Phase I issues. In addition:

> The parties are to serve and file first wave interrogatories by January 15, 1981. Any objections to those interrogatories shall be served and filed on or before January 23, 1981. Defendants are to confer and submit joint interrogatories and objections. Failure to file timely objections will operate as a waiver of any and all objections. The objections will be discussed and ruled upon at the January 30, 1981 conference. The answers to all first wave in-

terrogatories are to be served and filed by February 13, 1981.

Counsel are to submit memoranda outlining their thoughts and proposals regarding a comprehensive plan and timetable for Phase I discovery by January 23, 1981. The court will hear argument about the various proposals for Phase I discovery at the January 30, 1981 conference.

Statutes of Limitations:

Counsel shall serve and file briefs setting forth the applicable law relating to the statutes of limitations of every state by January 30, 1981. Reply briefs, if necessary, shall be served and filed by February 6, 1981.

Next Conference:

The next pretrial conference will be held before the undersigned at the Long Island Courthouse on January 30, 1981 at 9:00 a.m. Any party wishing to propose additions to the agenda should do so by letter to the court received no later than January 27, 1981.

SO ORDERED.

In re "AGENT ORANGE" PRODUCT LIABILITY LITIGATION.

MDL No. 381.

United States District Court, E.D. New York.

Feb. 24, 1982.

Victor J. Yannacone, Jr., Yannacone & Yannacone, Patchogue, N.Y., Schlegel & Trafelet, Ltd., L. Steven Platt, Daniel C. Sullivan, Sullivan Associates, Ltd., Chicago, Ill., Hy Mayeson, Spring City, Pa., David Jaroslawicz, New York City, Newtown B. Schwartz, P.C., Benton Musslewhite, Inc., Houston, Tex., Dorothy Thompson, Los Angeles, Cal., W.T. McMillan, W.T. McMillan & Co., associated counsel for Australian plaintiffs, Brisbane, Queensland, Australia, Jerry G. Wieslander, Frank G. Wieslander, Altoona, Iowa, Lewis A. Royal, Samuel Zelden, Des Moines, Iowa, David C. Anson, Deconcini, McDonald, Brammer, Yetwin & Lacy, Tucson, Ariz., Phillip E. Brown, Hoberg, Finge, Brown, Cox & Molliga, San Francisco, Cal., Melvin Block, Brooklyn, N.Y., Marshall A. Bernstein, Bernstein, Bernstein & Harrison, Philadelphia, Pa., Louis B. Merhige, New Orleans, La., Dennis M. O'Malley, Grant & Artesani, Boston, Mass., Leslie Hulnick, Wichita, Kan., Sidney W. Gilreath, Knoxville, Tenn., Stephen J. Cavanaugh, Bellaire, Tex., Robert P. Schuster, Spence Moriarty & Schuster, Jackson, Wyo., Alton C. Todd, Brown & Todd, Alvin, Tex., Jules B. Olsman, Southfield, Mich., Gerald J. Adler, Crow, Lytle, Gilwee, Donoghue, Adler & Weninger, Sacramento, Cal., Jack E. London, Miami, Fla., David J. Ghilari, Madison, Wis., William G. Moran, Denver, Colo., Dante Mationi, Philadelphia, Pa., Elgin L. Crull, Louisville, Ky., Charles J. Traylor, Grand Junction, Colo., Victor L. Marcello, Talbot, Sotile, Carmouche, Waquespack & Marchand, Donaldsonville, La.,

Janet T. Phillips, Rodgers, Monsley, Woodbury & Berggreen, Las Vegas, Nev., William D. Nelsch, William A. Cohan, Denver, Colo., William J. Risner, Tucson, Ariz., James L. Witzel, McKelvey, Cotton & Witzel, East Lansing, Mich., Robert I.P. Pasternak, Jane R. Kaplan, Berkeley, Cal., Norton Frickey, Denver, Colo., Robert C. Huntley, Jr., Racine, Huntley & Olson, Pocatello, Idaho, Jacque B. Pucheu, Pucheu & Pucheu, Eunice, La., Jeffrey M. Stopford, Litvin, Blumberg, Matusow & Young, Philadelphia, Pa., Joseph D. Jamail, Jamail & Kolius, Houston, Tex., Leonard W. Schroeter, J. Kathleen Learned, Schroeter, Goldmark & Bender, P.S., Seattle, Wash., Bennett, Di-Filippo, Davison, Henfling & Alessi, East Aurora, N.Y., James A. George, George, George & George, Baton Rouge, La., Robert M. Salzman, Pfeffer, Becker, Gabric & Cerveny, Chicago, Ill., Arden C. McClelland, McClelland Law Offices, Missoula, Mont., Daniel E. Bechnel, Jr., Bechnel & Faucheux, Reserve, La., Don S. Willner, Willner, Bennett, Bobbitt & Hartman, Portland, Or., Robert A. Taylor, Jr., Ashcraft & Gerel, Washington, D.C., John J. Lowrey, Chicago, Ill., Donald H. Dawson, Harvey, Kruse & Westen, P.C., Detroit, Mich., Jonathan N. Garver, Cleveland, Ohio, Dennis B. Francis, Gillenwater, Whelchel & Nichol, Knoxville, Tenn., Russell L. Cook, Jr., Fisher, Roch & Gallagher, Houston, Tex., Irwin E. Schermer, Schermer, Schwappach, Borkon & Ramstead, Minneapolis, Minn., David D. Noel, Jenkins & Jenkins, Knoxville, Tenn., Thomas E. Allen, Curtis, Crossen, Hensley, Allen, Curtis & Altman, St. Louis, Mo., Kenneth N. Molberg, Dallas, Tex., Phil M. Carmell, Jr., Gage & Tucker, Kansas City, Mo., Wayne B. Harbarger, III, Littlefield, McDermand & Harbarger, Sacramento, Cal., William T. Jorden, Erie, Pa., Devine & Morris, Atlanta, Ga., Byron N. Fox and Gary K. Hoffman, Brown & Fox and Gary K. Hoffman, Brown

& Fox, Kansas City, Mo., Ernest L. Caulfield, New Orleans, La., Thomas E. Connolly, Schneider, Reilly, Zabin, Connolly & Costello, P.C., Boston, Mass., Gary W. Anderson, Erler, Taylor & Anderson, Louisville, Ky., John F. Vecchio, Houston, Tex., Caenen & Niederhauser, Mission, Kan, John T. Golden, Robert F. Stein and William J. Stradley, Stradley, Barnett & Stein, Houston, Tex., Douglass D. Hearne & Associates, Austin, Tex., Lawrence M. Ludwig and Kirby G. Upright, Scranton, Pa., Epstein & Kesselman, Chicago, Ill., Brenda S. Jenkins, Werner & Rusk, Houston, Tex., Richard R. Ravreby, Ravreby & Connolly, Carlsbad, Cal., Robert A. McNess, III, and Robert W. Knolton, Layton & McNess, P.C., Oak Ridge, Tenn., Henry E. Weil and Ronald S. Canter, Belli, Weil & Jacobs, Rockville, Md., Cletus E. Amlung and J. Michael Poole, Louisville, Ky., Synchef & Synchef, Chicago, Ill., Percy J. Blount, Saul, Blount & Martin, P.C., Augusta, Ga., Richard C. McLena, Denver, Colo., Carlton T . Wynn, Hare, Wynn, Newell & Newton, Birmingham, Al., Owen J. Bradley, New Orleans, La., Elliot E. Brown, Metaire, La., James R. Dawson, Johnston, Thornton, Dawson & Hunter, Shreveport, La., Roger J. Larue, Jr., Metaire, La., William M. Beasley, Mitchell, Eskridge, Voge, Clayton & Beasley, Tupelo, Miss., Avram G. Adler, Adler, Barish, Levin & Creskoff, Philadelphia, Pa., Ned W. Johnson, Benckenstein, McNicholas, Oxford, Radford, Johnson & Nathan, Beaumont, Tex., Paul D. Rheingold, New York City, Fred D. Shapiro, Shapiro, Turoff & Gisser, Cleveland, Ohio, for plaintiffs.

Leonard L. Rivkin, Rivkin, Leff & Sherman, Garden City, N.Y., for Dow Chemical.

Morton B. Silberman, Clark, Gagliardi & Miller, White Plains, N.Y., Baker & McKenzie, Chicago, Ill., for Thompson-Hayward.

Wendell B. Alcorn, Jr., Cadwalader, Wickersham & Taft, New York City, for Diamond Shamrock.

Townley & Updike, New York City, for Monsanto.

Bud G. Holman and William Krohley, Kelley, Drye & Warren, New York City, for Hercules, Inc.

Joan Bernott, Dept. of Justice, Washington, D.C., for third-party defendant U.S.

Roy L. Reardon, James P. Barrett and Michael V. Corrigan, Simpson, Thacher & Bartlett, New York City, for Ansul Co.

Armand E. Capanna, Lewis, Overbeck & Furman, Chicago, Ill., for Riverdale Chemical Co.

Lawrence D. Lenihan, Thomas B. Kinzler and Alfred H. Hemmingway, Jr., Arthur Dry & Kalish, P.C., New York City, for Uniroyal.

Les J. Weinstein, McKenna & Fitting, New York City, for Occidental Petroleum Co.

William H. Sanders, William A. Lynch and Paul G. Lane, Blackwell, Sanders, Matheny, Weary & Lombardi, Kansas City, Mo., for N.A. Phillips.

John M. Fitzpatrick, Dilworth, Paxson, Kalish, Lelvy & Kauffman, Philadelphia, Pa., for Hooker Chemical Co.

GEORGE C. PRATT, District Judge.

This memorandum and order addresses the following subjects:

I. Dow's Motion for Reargument.

II. Defendants' Motion for Entry of Final Judgemnet or Certification.

III. Dow's Motion to Amend its Third Party Complaint Against the Government.

IV. Motions by Defendants Riverdale, Ansul, Hooker & Occidental.

V. Motion by Some Plaintiffs' Counsel for a Steering Committee.

VI. Dow's Motion to Decertify the Class.

VII. Statute of Limitations.

VIII. The Government Contract Defense.

IX. Narrowing Claims.

X. Discovery.

XI. Class Notice.

I. *Dow's Motion for Reargument*

Dow Chemical Company moves for reargument of that portion of the court's December 29, 1980 order which dismissed defendants' third party complaints against the United States. 506 F.Supp. 762. Much of what Dow argues on this motion has been considered and explicitly rejected by the court's earlier rulings, and the arguments are equally unpersuasive the second time around. Nor is the court persuaded to change its view by the subsequent cases brought to its attention by the parties. *Eg.*, *Broudy v. U.S.*, 661 F.2d 125 (CA9 1981) (independent post-service torts actionable including, in some circumstances, post-discharge failure to warn claim); *Lawell v. Brown*, 524 F.Supp. 8478 (W.D.Mo.1981); *Hinkie v. U.S.*, 524 F.Supp. 277 (E.D.Pa. 1981). *Cf. Monaco v. U.S.*, 661 F.2d 129 (CA9 1981); *Jaffee v. U.S.*, 663 F.2d 1226 (CA3 1981); *Lombard v. U.S.*, 530 F.Supp. 918 (D.C.C.1981).

Finally, contrary to defendants' assertions, the court anticipates no unusual difficulty in obtaining discovery from the government as a non-party. The government has une-

quivocally promised complete cooperation and liberal discovery, and despite some apparent misunderstandings, the government has done nothing to date to cause the court to doubt its willingness and ability to keep that promise. The motion is denied.

II. *Defendants' Motion for Entry of Final Judgment or Certification.*

On December 26, 1980 this court granted the government's motion to dismiss defendants' third party claims. Defendants now move for entry of a final judgment of dismissal of the government pursuant to FRCP 54(b) or, in the alternative, for an order pursuant to 28 U.S.C. § 1291(b) certifying for interlocutory appellate review questions concerning the dismissal of the United States on defendants' third party complaint.

FRCP 54(b) prohibits interlocutory appeals on multiple claims or by multiple parties without court certification, but provides that when more than one claim for relief is presented in an action,

> the court *may* direct the entry of a final judgment as to one or more but fewer than all of the claims or parties only upon an express determination that there is no just reason for delay and upon an express direction for the entry of judgment.
>
> FRCP 54(b).

Such certification rests in the sound discretion of the court:

> The District Court *may*, by the exercise of its discretion in the interest of sound judicial administration, release for appeal final decisions upon one or more, but less than all, claims in

> multiple claims actions. The timing of such a release is, with good reason, vested by the rule primarily in the discretion of the District Court as the one most likely to be familiar with the case and with any justifiable reasons for delay.
>
> *Sears, Roebuck & Co. v. Mackey*, 351 U.S. 427, 437, 76 S.Ct. 895, 900, 100 L.Ed. 1297 (1956) (emphasis in original).

Section 1292(b) of 28 U.S.C., the other statute upon which defendants rely in their quest for interlocutory review, provides that:

> When a district judge, in making in a civil action an order not otherwise appealable under the section, shall be of the opinion that such order involves a controlling question of law as to which there is substantial ground for difference of opinion and that an immediate appeal from the order may materially advance the ultimate termination of the litigation, he shall so state in writing in such order. 28 U.S.C. § 1292(b).

Both Rule 54(b) and § 1292(b) wisely contemplate that the usual course of events will be a single appeal from a final judgment entered by a district court. This litigation has already given rise to one round of interlocutory appeals pursuant to § 1292(b), which effectively has caused nearly two years of delay. Nearly every issue decided in this massive litigation will impact on numerous parties, and a different resolution of many of the issues could have significant ramifications on other steps in the action. However, the litigation cannot proceed on an issue-appeal basis; otherwise, it might never end. The wisdom of the general rule – one appeal from a final judgment – is evident here. Later events may obviate the

need for an appeal. Even if plaintiffs ultimately prevail, defendants may then on appeal test this court's dismissasl of the third party claims and, if successful, pursue their remedies against the government at that time in an appropriate non-jury trial. The court concluded, therefore, that the interests of justice are best served if defendants' appeal from dismissal of their claims against the government are resolved later.

Accordingly, defendants' motions for entry of final judgment of dismissal of the government pursuant to FRCP 54(b), and defendants' motion for an order pursuant to 28 U.S.C. § 1292(b) certifying aspects of this court's December 26, 1980 order to the Court of Appeals for interlocutory review are denied.

III. *Dow's Motion to Amend its Third Party Complaint Against the Government.*

Defendant Dow moves to amend its previously dismissed third party complaint against the government. pointing out that certain governmental acts may, because of their nature or the circumstances of their timing, circumvent the bar of *Feres* and *Stencel Aero* with respect to defendants' third party claims against the government. However, at this stage of the litigation, when the court is being bombarded with numerous multidistrict actions containing virtually every possible theory of recovery, it is difficult to determine which, if any, of the alleged governmental acts might give rise to a valid third party action against the government.

That such claims may be validly asserted at some time in the future does not alter the thrust of the court's decision dismissing defendants' third party claims against the government. Those separate claims have nothing to do with the common issues at this stage of the MDL litigation, and

they can be fully and fairly considered at a later time. Moreover, Dow is not prejudiced by the government's absence at this stage, because it may assert such claims against the government even after judgment against Dow in the plaintiff's actions. If these various individual theories of recovery are to have impact on this litigation at all, the impact would come at a time when the causation issues are being considered. Furthermore, as noted previously, discovery from the government with respect to Phase I issues will be unaffected by disposition of this motion.

For these reasons, defendant Dow's motion to amend its third party complaint against the government is denied, without prejudice to possible renewal after the Phase I issues have been tried and decided, and after the full range of theories asserted by plaintiffs are better known.

IV. *Motions by Defendants Riverdale, Ansul, Hooker and Occidental.*

Defendants Riverdale, Ansul, Hooker, and Occidental have all moved to dismiss all claims against them on the ground that they never designed, manufactured or marketed Agent Orange or any phenoxy herbicide for use in southeast Asia. Nothing has been presented to the court to establish that any of these defendants did in fact supply Agent Orange or other herbicides to the government. Since its motion was filed, defendant Riverdale has indicated its desire to withdraw the motion without prejudice, apparently preferring to proceed by way of stipulations with individual plaintiffs that preserve the plaintiffs' rights to later assert claims should evidence surface to establish that Riverdale produced Agent Orange or other phenoxy herbicides for the government's use in southeast Asia.

With specific reference to Hooker and Occidental, some plaintiffs have argued that those companies produced some of the component chemicals used by other defendants in manufacturing Agent Orange, and that until it can be determined which materials or processes, if any, actually caused the harm complained of by plainiffs, it would be inappropriate to grant summary judgment to the manufacturer of a component chemical.

At this stage of these actions no practical purpose is served by having these defendants remain parties on the possibility that later acquired knowledge may establish a theory of liability against them. When and if plausible bases for such liability can be established, there will be ample opportunity to bring in these or other defendants to participate in the proceedings. On the other hand, the defendants may wish to participate now on the possibility that at a later time they may be brought in.

Accordingly, the motions by Ansul, Hooker, and Occidental to dismiss all of the plaintiffs' complaints against them are granted as to those defendants who, within 20 days of the date of this order, file with the court a consent to renewal of the action against them by any present or future Agent Orange plaintiffs or class members in the event that evidence should surface during this litigation that the defendant did manufacture or sell Agent Orange or some other herbicide to the government, directly or indirectly, for use in southeast Asia during the period of the Vietnam war, and agreeing not to raise any statute of limitations defense that includes any time that passes between the date of commencement of the first of these Agent Orange actions and any possible renewal of plaintiffs' claims against it. The waiver of the statute of limitations must also include any other claim against the defendants' products which might reasonably be involved in this

litigation.

Any defendant who does not file the consent and waiver will remain a party defendant in the action. Upon the filing of such a consent and waiver all of these actions are dismissed against the filing defendant.

V. *Motion by Some Plaintiffs' Counsel for Steering Committee.*

Attorneys for some plaintiffs move to have the court establish a steering committee composed of representatives of veterans' groups and a combination of attorneys from the different "camps" that seem to have arisen among plaintiffs' counsel. The court has previously designated Yannacone & Associates as lead counsel for plaintiffs in the many separate actions filed in this MDL litigation. In pretrial order no. 26, 506 F.Supp. 762, 763 (ED-NY 1980), the court granted plaintiffs' application to proceed as a class action and named Yannacone & Associates as counsel for the class. At that time, the court described Yannacone & Associates as a consortium of lawyers with "the expertise and desire to prosecute this demanding action properly", 506 F.Supp. 788 at n.32, and "capable counsel * * * willing to undertake the considerable commitment of time, energy and money necessary for the vigorous prosecution of the claims here asserted." 506 F.Supp. at 788. The court's view remains unchanged, particularly in the light of their declared willingness and desire to cooperate with, and consider all ideas and suggestions submitted by attorneys for separate plaintiffs. Yannacone & Associates are to be counsel for the plaintiff class, as well as lead counsel for all plaintiffs, and there is no evidence at this time that a formal steering committee or any other form of court-dictated combined leadership would be in any manner preferable.

Accordingly, the motion of certain plaintiffs' counsel to establish a steering committee is denied.

VI. *Dow's Motion to Decertify the Class.*

On December 17, 1981, Dow moved orally to decertify the class which the court found in pretrial order no. 26 to be an appropriate and proper device for handling at least some phases of this litigation. Plaintiffs oppose the motion for decertification. The motion is denied.

VII. *Statute of Limitations.*

As they now stand, these actions must be viewed as having been commenced as separate actions brought by separate plaintiffs in separate districts under diversity jurisdiction. There are potentially a large number of different statutes of limitations and related accrual and tolling rules which may apply.

At an earlier time in this litigation, the court considered ruling as quickly as possible on statute of limitations issues. Further reflection has convinced the court, however, that little is to be gained by early decision of statute of limitations problems, and deferral of those decisions might well avoid many otherwise difficult and perplexing problems. It seems clear that at least some of the actions are viable even under the most restrictive interpretations of the various statutes of limitations. Consequently this litigation must run its course as to some plaintiffs whatever dispositon were now to be made of the statute of limitations issues.

As a class action, this litigation presents the statute of limitations issues in a different light By pretrial order #4 (Aug. 14, 1979) (following oral order on July 18, 1979) this court tolled the running of the statute of limitations

against all class members pending decision on the class action motion. While the basic decision to certify a class was made on December 29, 190, 506 F.Supp. at 787-92, the court has not yet formally certified the class and authorized notice to be disseminated. A formal order to that effect will soon be entered. Even at this stage, however, the class is being certified only for limited purposes, and it is not clear whether the remainder of the action can be treated as a class action, or whether at a future time the class must be decertified and the claims of the class members continued as separate actions. In view of this uncertainty, the court continues its order tolling the statutes of limitations for as long as the class action may be pending, or until further order of the court.

VIII. *The Government Contract Defense.*

A. *History of the Litigation with Respect to the Government Contract Defense.*

Defendants in 1980 moved for summary judgment based on what has been termed the "government contract defense." They argued that liability may not be imposed upon them for injuries arising out of the government's use of Agent Orange, because defendants had manufactured Agent Orange under contract with the United States government and in strict compliance with its specifications.

By memorandum and order dated December 26, 1980, the court recognized that "a government contract defense exists and has possible application to the facts at bar", but denied summary judgment on the ground that application of the government contract defense presented triable issues of fact. 506 F.Supp. at 796. The court further established a plan for the management of this litigation with the issues presented by the government contract de-

fense to be tried as the first of several "phased' trials. 506 F.Supp. at 782-86.

In order to better focus the issues, the court ordered the parties to submit briefs and proposed special verdicts setting forth the parties' positions as to the elements constituting the government contract defense. Having carefully considered the written submissions as well as the oral arguments of counsel, the court is prepared to decide how the elements of the government contract defense will apply in the context of this litigation as it now appears at this relatively early stage.

B. *The Parties' Positions.*

Defendants contend that they are entitled to judgment dismissing the complaints if on the Phase I trial it is determined:

1. That the United States military established the specifications for "Agent Orange"; and

2. That the "Agent Orange" manufactured by the defendants met the specifications in all material respects.

Plaintiffs[1] contend that in order to succeed on the gov-

[1] Counsel for one group of plaintiffs have submitted a separate memorandum arguing that there can be no government contract defense to a claim grounded in strict products liability and, further, that the only realistic government contract defense is one which negates any duty owed by defendants to plaintiffs under either a negligence theory or a strict products liability theory. Under this view, the Phase I trial of the government contract defense would simply be a trial of certain liability issues, but with the burden of proof reversed. As indicated in the text, this court rejects that view of the defense. Similarly, the court does not accept the view that the government contract defense cannot apply in a strict products liability case. It is true that the policies giving rise to strict products liability reflect considerations different from those involving a negligence approach to liabili-

ernment contract defense the defendants must establish:

1. That they had no role directly or indirectly in preparing the specifications for "Agent Orange";

2. That the expertise of the government was sufficient to enable it to exercise independent judgment with respect to the dioxin contamination of "Agent Orange";

3. If the specifications were, to the experts in defendants' employ, either dangerous or deficient, then that defendants brought these dangers or deficiencies to the attention of the government and that the government chose to require manufacture of the defective product;

4. That defendants exercised no discretion in choosing the "Agent Orange" manufacturing process and dioxin contamination level in the delivered product;

5. That defendants in fact complied with the spirit and intent of the specifications; and

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ty. Nevertheless, the policies which require a government contract defense, particularly in the context of manufacturing weapons for the military, override those considerations which might otherwise impose liability on a manufacturere whether on a negligence or strict products liability theory. The purpose of a government contract defense in the context of this case is to permit the government to wage war in whatever manner the government deems advisable, and to do so with the support of suppliers of military weapons. Considerations of cost, time of production, risks to participants, risks to third parties, and any other factors that might weigh on the decisions of whether, when, and how to use a particular weapon, are uniquely questions for the military and should be exempt from review by civilian courts. As indicated in the text, considerations of public policy require that a supplier of weapons to the government has two duties: (1) to comply with the specifications imposed by the government, and (2) to see that the government is apprised on any risks or hazards related to the weapon of which the supplier has knowledge. Given those two conditions, a supplier to the government under specifications established by the government, is exempt from liability whether the theory of the claim be negligence of strict products liability.

6. That defendants were guilty of no wrong-doing in the performance of their contracts with the government.

C. *Statement of Government Contract Defense.*

Courts should not require suppliers of ordnance to question the military's needs or specifications for weapons during wartime. Whether to use a particular weapon that creates a risk to third parties, whether the risk could be avoided at additional cost, whether the weapon could be made safer if a longer manufacturing time were allowed, indeed, whether the weapon involves any risk at all, are all proper concerns of the military which selects, buys and uses the weapon. But they are not sources of liability which should be thrust upon a supplier, nor are they decisions that are properly made by a court.

Public policy does require, however, that the military decisions on those vital questions should at least be made on the basis of the readily available information. A supplier should not be insulated from liability for damages that would never have occurred if the military had been apprised of hazards known to the supplier. A supplier, therefore, has a duty to inform the military of known risks attended to a particular weapon that it supplies, so as to provide the military with at least an opportunity fairly to balance the weapon's risks and benefits.

This principle would not impose upon a supplier any duty of testing that was not included in the specifications. It merely would require the supplier to share with the military the extent of a supplier's knowledge about the hazards of the product being purchased. If this knowledge level between supplier and the military is at least in balance, the supplier is then shielded by the government contract defense form liability for damages resulting from

use of a product supplied pursuant to and in compliance with government contract specifications.

In short, the court has considered carefully the arguments of the parties and the many cases submitted in support thereof,[2] and concludes that a defendant in this case will be entitled to judgment dismissing all claims against it based on that defendant's having supplied "Agent Orange" to the government pursuant to a contract, if the defendant proves:

1. That the government established the specifications for "Agent Orange";

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[2] Among the cases relied on by the parties in support of their argument are the following: *Green v. ICI America, Inc.*, 362 F.Supp. 1263 (E.D.Tenn.1973); *Littlehale v. E. I. duPont de Nemours & Co.*, 268 F.Supp. 791 (SDNY), *aff'd*, 380 F.2d 274 (CA2 1966); *Ward v. Humble Oil & Ref'g Co.*, 321 F.2d 775 (CA5 1963); *Montgomery v. Goodyear Tire & Rubber Co.*, 231 F.Supp. 447 (SDNY 1964); *O'Keefe v. Boeing Company*, 335 F.Supp. 1104 (SDNY 1971); *Foster v. Day & Zimmerman, Inc.*, 502 F.2d 867 (CA8 1974); *Whitaker v. Harvell Kilgore Corp.*, 418 F.2d 1010 (CA5 1969); *United States v. Pennsylvania Environmental Hearing Board*, 431 F.Supp. 747 (M.D.Pa.1977), *aff'd*, 584 F.2d 1273 (CA3 1978); *Person v. Cauldwell Wingate Co.*, 176 F.2d 237 (CA2), *cert. denied*, 338 U.S. 886, 70 S.Ct. 189, 94 L.Ed. 544 (1949); *Ryan v. Feeney & Sheehan Building Co.*, 239 N.Y. 43, 145 N.E. 231 (1924); *Sanner v. Ford Motor Company*, 144 N.J.Super. 1, 364 A.2d 43, 37 (Law Div.1976), *aff'd* 154 N.J.Super. 407, 381 A.2d 805 (A.D.1977), *cert. denied*, 75 N.J. 616, 384 A.2d 846 (1978); *Casabianca v. Casabianca*, 104 Misc.2d 348, 428 N.Y.S.2d 400 (S.Ct. Bronx Cty.1980); *Yearsley v. W.A. Ross Construction Co.*, 309 U.S. 18, 60 S.Ct. 413, 84 L.Ed. 554 (1940); *North American Aviation v. Highes*, 247 F.2d 517 (CA9 1957); *Boeing Airplane Company v. Brown*, 291 F.2d 310 (CA9 1961); *Sevits v. McKiernan-Terry Corporation*, 264 F.Supp. 810 (SDNY); *Berg v. Reaction Motors Div.*, 37 N.J. 396, 181 A.2d 487 (1962); *Smith v. Lockheed Propulsion Company*, 247 Cal.App.2d 774, 56 Cal.Rptr. 128 (1967); *Challoner v. Day and Zimmermann, Inc.*, 512 F.2d 77 (CA5 1975).

2. That the "Agent Orange" manufactured by the defendant met the government's specifications in all material respects; and

3. That the government knew as much as or more than the defendant about the hazards to people that accompanied use of "Agent Orange".

These three elements, if established at the Phase I trial, will insulate a defendant from liability based on its having supplied the "Agent Orange" pursuant to the government contract.

The above statement of the government contract defense as it will apply in this case requires some elaboration.

1. *"Judgment Dismissing All Claims".*

The government contract defense is an affirmative defense which, if successful, is intended to defeat liability that otherwise might exist. If established, it would be a bar to the claims asserted in this lawsuit with respect to all matters that fall within the scope of the defense. In broadest terms, plaintiffs' claims against defendants are that for having manufactured and sold to the government "Agent Orange" for use in southeast Asia, defendants should be held liable under principles of negligence, strict products liability or warranty. To the extent it is successful on this government contract defense, a defendant would be entitled to dismissal of all such claims.

2. *"Agent Orange".*

As used in this discussion, the term "Agent Orange" denotes not only the specific product designated Agent Orange, but also another herbicide used by the United States military in southeast Asia during the relevant period. As discused in later portions of this decision,

plaintiffs will be required to identify the particular herbicides complained of.

3. *"Pursuant to a Contract With the Government."*

The court is considering the government contract defense at this time only with respect to the Phase I trial which is limited to those defendants claiming to have supplied "Agent Orange" under a contract with the government. The court does not now consider, nor does it express any opinion on, whether the government contract defense may have application to (a) "Agent Orange" manufactured by a defendant but acquired by the government from a third party, or (b) what, if any, protection a particular defendant's subcontractor supplier of component materials may have if that defendant successfully proves the government contract defense.

Since the defense applies to a product only when it was supplied by a defendant pursuant to a government contract, in order to succeed the defendant must establish that it did have one or more contracts with the government to supply "Agent Orange". Moreover, the defense will extend to, and protect the defendant against liability for, only those particular shipments that were made under the contract with the government.

4. *"If the Defendant Proves".*

As an affirmative defense to liability that the law might otherwise impose, the government contract defense carries with it the burden of proof. This means that a defendant who claims protection from the government contract defense must prove each of its elements. A defendant's failure to establish the defense will not, of course, mean that the defendant necessarily will be held liable. As

to that defendant the litigation then would proceed to other issues such as negligence, strict liability, general causation, specific causation, and damages.

5. *"Government Established the Specifications".*

Since one of the premises supporting the government contract defense is that liability should not be imposed upon a contract or who merely supplied the government with a weapon it reqired, one of the elements of the defense is that the product in issue be one for which the government established the design and specific characteristics.

Plaintiffs argue that defendants must show that they had neither direct nor indirect responsiblity for formulating the specifications which eventually became part of the contract. According to plaintiffs, any role by a defendant in preparation of the specifications, whether it be advice to the government about the product design, or even touting of the product to the government, should defeat the defense. They also argue that as part of this element a defendant has the burden to establish that the government had sufficient expertise to exercise independent judgment with respect to the dioxin contamination of "Agent Orange".

The Court rejects these factors urged by plaintiffs as essential to the government contract defense. While evidence of each may be relevant in establishing the relative degrees of knowledge as between the government and the defendants, all that is necesary on this element of the defense is for defendant to prove that the product it supplied was a particular product specified by the government. If it should appear that the contract set forth merely a "performance specification", as opposed to a specified

product, then the government contract defense would be far more restricted than as described here.

6. *The Defendant's Product "Met the Government's Specifications in all Material Respects".*

This element is relatively straightforward. If still at issue by the time of trial, it will require a comparison of the government's specifications for the herbicide with the characteristics and quality of the product supplied. If the specifications called for particular methods of manufacture, those aspects of performance would have to be explored as well. Failure of a defendant to conform to the specifications would defeat the defense only if the discrepancy between specifications and product was a material one in the context of this action.

Plaintiffs also urge that there can be no government contract defense if defendants exercised discretion in choosing the manufacturing process and the dioxin contaminaton level in the delivered product. They argue that the type of manufacturing process used affected the level of dioxin contamination and that by exercising discretion as to the process the defendants controlled the extent of the dioxin hazard. If these facts are true and if defendants knew that greater dioxin contamination caused greater hazard, then under the court's formulation of the elements, defendants could succeed on the defense only by establishing that the government had knowledge equal to theirs and that even with that knowledge the government imposed no requirement or restriction with respect to the manufacturing process or the level of dioxin contamination. Obviously, if requirements were established by the government and a defendant failed to observe them, then that defendant would not have complied with the specifications and would lose its government contract defense.

But if a defendant can establish that there were no such requirements and that the government knew as much (or as little) about the hazards attendant upon the manufacturing process and dioxin contamination as did the defendant, then the defense could be sustained.

7. *Relative Knowledge of Hazards.*

Perhaps the central question for the Phase I trial is whether the government knew as much as the defendants did about the hazardous aspects of this product. If the government knew as much as the defendants and, knowing of the hazards, decided to use "Agent Orange" as a weapon of war, defendants would be protected from liability. It is only if defendants concealed or failed to disclose to the government information about hazards of which the government was ignorant that defendants fail to gain the protection of the government contract defense in the context of these actions.

Defendants argue vigorously that any issue relating to liability, causation or damages may not be involved with the government contract defense; but there is no rule of law that makes particular evidence or particular facts relevant solely to a single issue in a case. A defendant can be insulated from liability by the government contract defense only if in addition to showing copliance with specifications established by the government, it can show that it was not aware of hazard-causing deficiencies in the specifications as to the design or method of manufacture, deficiencies which, if known to the government, might have altered the government's decisions as to whether and how to use the herbicide.

Defendants also argue that question such as what defendants knew or should have known, foreseeability

the state of the art, or the absence of a "glaring" or "patent" defect in the specifications are irreleant to the government contract defense. The court rejects this view to the extent indicated above. If the government knew as much as a defendant about the hazards and risks related to the use of "Agent Orange", then that defendant would be entitled to protection from liability if it produced the product pursuant to and in compliance wtih the contract specifications. On the other hand, if a defendant was aware of hazards that might reasonably have affected the government's decision about the use of "Agent Orange", and if that defendant failed to disclose those hazards to the government, then the government contract defense fails as to that defendant, and at a later stage of the litigation plaintiffs will be entitled to establish liability on any property theory of liability.

IX. *Narrowing Claims.*

The future course of this litigation in general, and effective preparation and presentation of the Phase I trial in particular, require that some of the issues be narrowed as soon as possible. To that end:

1. *Diversity Jurisdiction.*

By April 9, 1982 each defendant shall serve and file, under docket no. MDL-381, a verified statement of its (a) state of incorporation and (b) principal place of business.

2. *"Agent Orange".*

In the court's discussion of the government contract defense the term "Agent Orange" was frequently used in quotation marks as a general term for all herbicides that may be in issue in this action. In order to proceed further,

however, it appears necessary to specifically identify the particular products that are to be the subject of plaintiff's claims in this litigation. At this stage it is clear that plaintiffs are at least challenging Agent Orange. Plaintiffs may also wish to challenge other specific herbicides. By March 12, 1982 plaintiffs' attorneys shall serve and file a statement identifying all herbicides which plaintiffs claim are subjects of this litigation, including the herbicides' correct chemical names. All complaints will be deemed amended to allege the herbicides thus specified, and absent unusual circumstances plaintffs will hereafter be limited to the herbicides specified.

3. *Government Contracts.*

In order to claim the government contract defense, a defendant shall, by April 9, 1982, serve and file a verified statement affirming or denying with respect to Agent Orange and each other herbicide claimed by plaintiffs in response to ¶ 2 above, that it supplied to the government under contract, directly or indirectly, some of the product. Any defendant who thus claims to have supplied a herbicide under contract with the government shall by April 22, 1982 serve on Yannacone & Associates a complete copy of the contract pursuant to which the herbicide was supplied, and shall serve and file a statement of the appropriate quantities supplied and the dates they were supplied. A defendant shall be deemed to have waived the government contract defense as to any herbicide which it denies having supplied, or as to which it fails to serve a copy of the applicable government contract, or as to any quantities not described.

4. *Joint Defense..*

In presenting the government contract defense described in Part VIII of this decision, two or more defendants may

elect to proceed jointly on a stipulation that the defense will apply to all or none. Absent such a stipulation by a defendant who claims the government contract defense, that defense will have to be determined separately for that defendant.

Accordingly, any defendants who want to proceed jointly on the government contract defense shall file their stipulation by April 22, 1982.

X. *Discovery.*

Thus far, discovery on Phase I issues has proceeded informally and without court direction. The court understands that until there was a further definition of the elements of the government contract defense, intensive discovery was not appropriate. Now, however, such intensive discovery is not only appropriate but required. By March 12, 1982, counsel shall sumbit to the court specific proposals and a proposed timetable for the discovery required to prepare for the Phase I trial, and for any other discovery that may be appropriate at this time. A conference will be held on March 18, 1982 at 9:30 a.m. Counsel should attend prepared to spend as much time as necessary to resolve all preliminary discovery disputes. All previously submitted motions addressed to Phase I discovery issues are deemed denied without prejudice to reconsideration in light of any decisions and problems that may develop in the course of or as a result of the March 18 discovery conference. The conference will be off the record and in chambers. Its results shall be embodied in a formal pre-trial order.

XI. *Class Notice.*

The court is in the process of finalizing the content of the formal notice to be given to class members, and a for-

mal order specifying the notice will be entered shortly. More troublesome than the form of notice, however, is the manner in which the formal notice shall be disseminated.

The court is confused by counsel for the government's assertion that the government is unable to assist in notifying veterans and their families of the pending class suit, and the court will discuss this issue with counsel at the conference on March 18, 1982.

SO ORDERED.

In re "AGENT ORANGE" PRODUCT LIABILITY LITIGATION.

MDL No. 381.

United States District Court,
E.D. New York.

May 20, 1983.

On Motion for Reargument June 22, 1983.

Victor J. Yannacone, Jr., Yannacone & Yannacone, P.C., Patchogue, N.Y., for plaintiffs.

Morton B. Silberman, Clark, Gagliardi & Miller, White Plains, N.Y., for Thompson-Hayward.

Leonard L. Rivkin, Rivkin, Leff, Sherman & Radler, Garden City, N.Y., for Dow Chemical.

Wendell B. Alcorn, Jr., Cadwalader, Wickersham & Taft, New York, City, for Diamnd Shamrock.

John C. Sabetta, Townley, & Updike, New York City, for Monsanto.

William Krohley, Kelley, Drye & Warren, New York City, for Hercules.

David R. Gross, Budd, Larner, Kent, Gross, Picillo & Rosenbaum, Newark, N.J., for Thompson Chemical Corp.

Paul V. Esposito, Lewis, Overbeck & Furman, Chicago, Ill., for Riverdale Chemical Co.

Thomas Beck, Arthur, Dry & Kalish, P.C., New York City, for Uniroyal, Inc.

Arvin Maskin, Gretchen Leah Witt, Civ. Div., U.S. Dept. Justice, Washington, D.C., for the U.S. of America.

GEORGE C. PRATT, Circuit Judge:*

In this multidistrict litigation Vietnam veterans and their relatives seek to recover damages from nine chemical companies, Dow Chemical Co. (Dow), Hercules, Inc. (Hercules), The Monsanto Co. (Monsanto), Diamond Shamrock Corporation (Diamond Shamrock), Hoffman-Taff (Missouri) (Hoffman-Taff), T.H. Agriculture & Nutrition Co. (T.H.), Riverdale Chemical Co. (Riverdale), and Uniroyal, Inc. (Uniroyal), for injuries allegedly suffered as a result of their exposure to a herbicide called Agent Orange used by the military in Vietnam. Plaintiffs' claim is that 2,3,7,8 Tetrachlorodibenzo-p-dioxin (dioxin) is extremely toxic, that it was produced as a by-product in the manufacture of trichlorophenol (TCP) which was a precursor chemical for 2,4,5-trichlorophenoxy acetic acid (2,4,5-T), which in turn was combined with 2,4-dichlorophenoxyacetic acid (2,4-D) to make Agent Orange. Any dioxin produced in the manufacture of TCP carried forward into 2,4,5-T and therefore into the Agent Orange. Thus the claims of the plaintiffs focus upon dioxin as a contaminant in the Agent Orange supplied to the government pursuant to contracts with the separate chemical companies.

In pretrail order no. 26, I recognized the possibility of a government contract defense to the plaintiffs' claims but denied defendants' motions to dismiss on that ground, finding that the motions presented issues of fact which precluded summary judgment. 506 F.Supp. 762, 796 (E.D.N.Y. 1980). The contours of the defense were developed in more detail in pretrial order no. 33:

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*Of the U.S. Court of Appeals for the Second Circuit, sitting by designation.

> [A] defendant in this case will be entitled to judgment dismissing all claims against it based on that defendant's having supplied "Agent Orange" to the government pursuant to a contract, if the defendant proves:
>
> 1. That the government established the specifications for "Agent Orange";
>
> 2. That the "Agent Orange" manufactured by the defendant met the government's specifications in all material respects; and
>
> 3. That the government knew as much as or more than the defendant about the hazards to people that accompanied use of "Agent Orange".

534 F.Supp. 1046, 1055 (E.D.N.Y.1982).

Because the issues presented by the government contract defense seemed to be separate and distinct from the general theories of liability then being advanced by plaintiffs, I ordered a separate trial of the defense, 506 F.Supp. at 796, and appointed a special master to supervise discovery for that trial scheduled to begin on June 27, 1983, 94 F.R.D. 173 (E.D.N.Y.1982).

In April 1983, after almost eleven months of intensive discovery, I permitted any defendant who so elected to move for summary judgment with respect to the government contract defense. The basis of such summary judgment would, of course, be that there were no triable issues of fact with respect to the defense, and that the moving defendant was therefore entitled to dismissal of all claims against it as a matter of law. All defendants except Monsanto and Diamond Shamrock moved for summary judgment. In reaching a determination on these motions, I have reviewed all of the papers submitted, both in support and in opposition, including counsel's extensive memoran-

da and attached exhibits. In addition, I listened closely to the oral arguments presented by all parties.

The central issue raised by the government contract defense centers on its third element: whether the government knew as much or more than the contracting defendant about the hazards to people that accompanied the use of Agent Orange. As this action has matured, the plaintiffs have concentrated their claims on dioxin s a contaminant present in 2,4,5-T; consequently, the knowledge in question is knowledge about dioxin. To focus upon this element, it is necessary to compare what knowledge the government had about dioxin in 2,4,5-T and about its contamination of Agent Orange, with what knowledge each of the moving defendants had about these matters.

Since discovery is not yet complete, the following discussion of facts and evidence dos not constitute a finding of facts for any future purpose except for those specifically mentioned below in connection with the specifications for and performance of the government contracts.

RELATIVE LEVELS OF KNOWLEDGE

The Government

Even when all doubts are resolved in favor of the plaintiffs, as required by *SEC v. Research Automation Corp.*, 585 F.2d 31, 33 (2d Cir.1978), the record demonstrates that the government and the military had a considerable amount of knowledge about 2,4,5-T, about dioxin, and about the health hazards associated with both. The following general chronology, while not all-inclusive, gives some indication of both the extent of government knowledge in this area and of the fact that it was continually increasing.

During World War II, the military discovered the herbicidal properties of 2,4,5-T and conducted extensive testing of various possible herbicides. This research was conducted under the supervision of the Crops Division of the Army Chemical Corps. at Camp Detrick, Maryland.

Several years later, in 1949, Dr. Donald Birmingham of the Public Health Service visited Nitro, West Virginia, where there had been an explosion at Monsanto's 2,4,5-T plant. The report of Dr. Birmingham's colleague, Dr. Louis Schwartz, indicated a connection between chloracne and the chemicals produced in the plant.

There is uncontradicted evidence in the record that a number of people knew in the 1950s that dioxin was toxic although they may not have connected it with 2,4,5-T. Several factors contributed to this awareness.

First, in the early 1950s, C.H. Boehringer Sohn Company of Germany had serious cases of Chloracne among workers engaged in the production of TCP, a precursor chemical used *inter alia* to manufacture 2,4,5-T. By 1955, The Boehringer company was forced to halt production at two plants. Dr. K.H. Schulz, a skin specialist, investigated the problem and in 1957 together with Professor J. Kimmig, reported his findings in an article entitled *Chlorinated Aromatic Cyclic Ethers As the Cause of Chloracne.* 44 Die Naturwissenshaften 337 (1957). In this article, the authors stated that they were able to isolate dioxin, which they believed to be the contaminant in TCP that was causing the health problems. While it is not established that anyone in the government read the Kimmig & Schulz article at the time it was published, the article was available as part of the scientific literature and it appeared in a note to the report written by Friedrich Hoffmann concerning his trip to Europe in 1959.

The "Hoffmann Trip Report" was a second factor contributing to government knowledge during this period. Dr. Hoffman, who was searching on behalf of the military for potential chemical warfare agents, reported that he had received "startling information" regarding the toxicity of the compound dioxin. In his report, he described the deaths of several workers in a plant that produced wood preservatives containing trace amounts of dioxin. In addition, he reported that the compound could cause severe, indeed fatal, liver damage. At least 10 copies of the Hoffmann report were sent to the Army Chemical Corps Chemical Warfare Laboratories at Edgewood Arsenal, the governmental body responsible for investrigating toxicity and analyzing chemical agents. Thus, the Hoffmann report on dioxin, coupled with the Kimmig & Schulz article connecting dioxin to TCP, raises a strong possibility that personnel at Edgewood, even before 1960, were aware of the connection between dioxin and TCP as well as the use of TCP to make 2,4,5-T.

Deposition testimony of Edgewood research personnel confirms that people at Edgewood knew about the toxicity of dioxin. Dr. Bernard Jandorf, chief or the Army Chemical Research Laboratory, testified that people at Edgewood had been familiar with this fact since the late 1950s. Dr. Richard Horton, a toxicologist, testified that he knew dioxin was toxic in 1959, as did Dr. Thomas Simmons, who worked in the Agents Research Branch. Walter Sultan, a pharmacologist in the Toxicity Screening Branch, testified that he had read he Hoffmann report.

Further evidence of governmental knowledge is found in the article written by Dr. Birmingham of the Public Health Service in 1959, stating that in the manufacture of 2,4,5-T, intermediate hydrocarbons of the chlorine group had caused chloracne in more than 200 chemical workers

at a manufacturing plant. Birmingham, *New Causes of Occupational Dermotoses,* 20 Industrial Health 489. 490 (1959). Dr. Marcus Key of the Public Health Service testified that he had learned of the association between hydrocarbons and chloracne and other diseases at the Harvard School of Public Health in 1953.

In the early 1960s, Dr. Bernard McNamara, Chief of the Toxicology Division at Edgewood, performed a studyat Edgewood Aresenal of the toxicity of Agent Purple, another defoliant containing 2,4,5-T that was used by the military. This testing was conducted at the request of General F.J. Delmore, Commanding General, U.S. Army Chemical Corps, Research & Development Committee. While the testing indicated that there was some toxicity, the results were not conclusive. At a meeting held at Edgewood Arsenal in 1963 to discuss and evaluate the toxicity of 2,4,5-T, the overall thrust of those reporting was that both 2,4,5-T and 2,4-D were safe for humans.

Other events occurring in 1963 give additional indications of governmental knowledge. The Institute for Defense Analysis wrote a report for the Advanced Research Project Agency, an agency within the Department of Defense. This report stated that herbicides were safe when used commercially, but that there could be increased hazards in military use because greater concentrations might be applied by less experienced personnel under the pressure inherent in battlefield use. The report noted the connection between chloracne and skin and repiratory irritations and their association with herbicides.

Dr. Key of the Public Health Service testified at his deposition that in 1963 he placed a sample of 2,4,5-T on his forearm to see if it would induce chloracne. He did this three times a week for three weeks and developed chloracne on his forearm. He also testified that he had

read Kimmig & Schulz and learned of dioxin from that article. When questioned concerning a June 1964 article by Dr. Jacob Bleiberg, *Industrially Acquired Porphyria,* 89 Archives of Dermatology 793 (1964), which discussed chloracne and porphyria in workers engaged in 2,4,5-T production, Key stated that he had reviewed the article at the time it was written and that it was only a more complete version of what they already knew.

The level of government knowledge appears to have increased much more rapidly during the mid-to-late 1960s. Defendants point to numerous instances of governmental knowledge which are not disputed by plaintiffs. Dr. Herbert Stokinger, the chief toxicologist of the Division of Occupational Health, testified that he knew dioxin was an impurity in 2,4,5-T sometime around 1965. Colonel Robert A. Shade, who was chief of the Chemical Operation Branch of Military Assistance Command-Vietnam and later on the staff of the chemical branch of the Assistant Chief of Staff Force Development, testified that he learned of the connection between dioxin and 2,4,5-T sometime between mid-1966 and summer 1968.

In July 1966, the director of the National Academy of Sciences, in response to a request for information, wrote to the Army Surgeon General telling him that 2,4,5-T was toxic and that chloracne was associated with it.

Recent deposition testimony indicates that people closely associated with the White House were aware of hazards involved in the use of defoliants. Dr. Gordon MacDonald, a member of President Johnson's Science Advisory Committee (PSAC), testified that the issues of herbicides and dioxin in herbicides were informally discussed by a subgroup of PSAC sometime between April and June 1965. Dioxin as an impurity in 2,4,5-T was also discussed. He said there was discussion of the potential toxicity of

dioxin, and while it was considered that the evidence was fragmentary and inconclusive, the subject of dioxin contamination deserved continuing attention. Dr. MacDonald testified that human health effects were discussed, and that he attended a meeting where the effectiveness of herbicides and the presence of dioxin in 2,4,5-T were discussed. According to MacDonald, Secretary of Defense Robert MacNamara attended this meeting.

Dr. Donald Hornig, Special Assistant to President Johnson for Science and Technology and Chairman of PSAC, testified at his deposition that by 1966 PSAC was discussing impurities in 2,4,5-T. He stated that this discussion occurred sometime between 1964 and 1966. He said that when he learned of the impurity, he felt that "one ought to be concerned" about what the magnitudes of the toxicological effects and of the exposures might be. He testified that he understood dioxin was a health hazard to human beings. However, he also testified that he did not relay the information to President Johnson.

An additional element of knowledge is found in a 1967 Rand report commissioned by the Advanced Research Project Agency of the Department of Defense. This report described "actual experience" of health hazards associated with the use of defoliants in Vietnam.

Finally, there is the study commissioned by the National Cancer Institute, *Evaluation of Carcinogenic Teratogenic, and Mutagenic Activities of Selected Pesticides and Industrial Chemicals* (Bionetics Report). This study evaluated the carcinogenic, teratogenic, and mutagenic effects of various chemicals. The study was commissioned in 1963, and the report is dated August 1968. The study did result in a finding of some teratogenic effect connected with the use of 2,4,5-T. While it is not clear that defendants are correct in their assertion that

portions of the study were available to the government earlier than August 1968, it is clear that by 1968 and 1969, the results of the study were available to the government.

This picture of knowledge shown to be in government hands is based almost entirely on uncontradicted and uncontested evidence. It reveals that the government and the military possessed rather extensive knowledge tending to show that its use of Agent Orange in Vietnam created significant, though undetermined, risks of harm to our military personnel. Against this picture we must examine what was known by the different defendants, keeping in mind that, by and large, much of the government's knowledge was classified and not shared with the defendants.

Dow Chemical Company

Dow supplied Agent Orange to the military pursuant to seven contracts. Deliveries were made from September 1965 to December 1968. The government established the specifications for the delivered product, and Dow performed to those specifications.

Dow began manufacturing 2,4,5-T in 1948. Dow admits that it knew prior to this that chloracne was an industrial health hazard present in the production of certain chlorinated hydrocarbons. It developed the "rabbit ear" test, which was non-specific, but was able to determine if a chloracnegen was present. Dow used this test until 1964.

Plaintiffs argue persuasively that Dow must have known about the 1949 explosion at the Monsanto plant in Nitro, West Virginia, in 1949, and the resulting cases of chloracne. Dow does not deny such knowledge.

In the 1950s, C.H. Boehringer Sohn Company had the chloracne problems in its plant discussed *supra,* and it

wrote to Dow for help. In 1955, Dow relied by sending a data sheet describing the hazards due to toxicity and the precautions Dow was taking to prevent them. In 1957, C.H. Boehringer reciprocated by informing Dow of the methods it had developed to prepare TCP so as to avoids "chloracne exciters".

The Kimmig & Schulz article was produced by Dow from its files during discovery. There is no indication in the record of when Dow obtained the article, other than the fact that it was referenced in a memo written by a Dow official in 1964.

Plaintiffs also argue that Dow knew about the outbreak of chloracne among workers at the Diamond Alkali (now Diamond Shamrock) plant in 1956. Dow does not deny this.

In February 1964 at Dow's plant in Midland, Michigan, more than 40 workers developed chloracne. These workers had been engaged in the manufacture of TCP. After shutting down the plant, Dow investigated the incident and found that there was a high concentration of chloracnegen in the waste stream from the plant. It determined that this chloracnegen was dioxin. Dow reported the incident to the Michigan Department of Health.

Around this time, Dow developed a method of using gas chromotography to detect dioxin in TCP and in 2,4,5-T at concentration levels as low as 1 part per million (ppm). Dow researchers were satisfied that there was no chloracnegenic response if the dioxin level was at or below 1 ppm. Dow thereupon instituted procedures to ensure that no TCP or 2,4,5-T left its plant with a dioxin level above 1 ppm. This is supported to a certain extent by Dow's exhibits 42 through 45 which indicate that Dow's dioxin levels in its 2,4,5-T were less than 1 ppm, although

these exhibits do not appear to cover all of the 2,4,5-T and Agent Orange that Dow produced. However, nowhere in their papers do plaintiffs challenge Dow's contention that its 2,4,5-T was contaminated by 1 ppm of dioxin or less. Since Agent Orange was a 50-50 mixture of 2,4,5-T with 2,4-D, and since plaintiffs have abandoned their earlier claims against 2,4-D, this in effect establishes for purposes of this motion a contamination level for Dow's Agent Orange at .5 ppm or less.

In March 1965, Dow called a meeting attended by Hercules, Diamond Alkali, and Hooker Chemical Corporation to discuss health hazards involved in the production of TCP and 2,4,5-T. No one from the government was invited to the meeting, but Dow had not yet contracted to produce Agent Orange. It is not disputed that Dow knew that the dioxin problem arose during the manufacturing process and that any dioxin produced at that stage could carry forward into the delivered product. At the meeting, Dow explained that precautions were necessary to prevent health hazards, and stated that it had examined herbicides sold by some other companies and found some to contain "surprising high levels" of dioxin. In a memo to the file after the March 1965 meeting, Dr. Edward Chandler of Diamond Alkali indicated that Dow thought that repeated exposure to 1 ppm could be dangerous.

In June 1965, V.K. Rowe of the Dow Biochemical Research Laboratory wrote to Ross Mulholland of Dow Chemical of Canada. He described the chloracne problems Dow had experienced and stated that Dow did not want any of its customers to develop acne. The letter also indicates a fear of government intervention into and control of the entire herbicide industry, and further that Dow wanted to get the problem under control without governmental regulation. Mulholland was cautioned not to

transmit this information to anyone else.

Dow claims, however, that on four occasions in 1967 it did transmit to the government information concerning health hazards related to the manufacture of Agent Orange and 2,4,5-T.

1. On February 29, 1967 A.P. Beutel, vice president of Dow, wrote a letter to Brigadier General J.A. Hebbeler concerning the government's plan for producing Agent Orange in a government plant. Beutel mentioned "certain health problems" inherent in the manufacturing process.
2. On April 20, 1967 Beutel wrote to H.G. Fredricks, Deputy Director of Procurement and Production, concerning the same subject—government production of Agent Orange. In the letter, Beutel mentioned a "serious potential health hazard" to workers, and stated that even with detection methods care is necessary in the handling of the product.
3. In August 1967 Beutel and two other Dow representatives told two officials from the office of the Secretary of Defense that caution should be exercised in producing 2,4,5-T.
4. On September 26, 1967 Beutel wrote to Andrew Anderson of Edgewood indicating that Dow would not bid on the government project to manufacture Agent Orange because of, among other reasons, the chloracne problem.

By 1970 there appears to have been widespread concern in varous parts of the government concerning the hazards of the defoliation program. In March 1970, Dow briefed representatives of the military on the presence of dioxin as an impurity in TCP and 2,4,5-T.

In June 1970, after temporary suspension of Agent Orange use, Dow wrote to Secretary of Defense Melvin Laird recommending "strongly" that the government set appropriate specifications and controls to ensure that no 2,4,5-T be used if it contained more than 1 ppm dioxin. Dow specifically urged that standard for any 2,4.5-T used as a component of Agent Orange if it was to be used as a defoliant in Vietnam.

On a motion for summary judgment, the moving party must show that "no genuine issue as to any material fact" exists. Fed.R.Civ.P. 56(c); *see, e.g., Landmark Land Co. v. Sprague,* 701 F.2d 1065 (2d Cir.1983). Here, several questions of fact preclude summary judgment in favor of Dow.

If there is a real difference in the level of knowledge between Dow and the government it focuses upon Dow's discovery in 1964 that dioxin was the chloracnegen in TCP, its development of a test to determine dioxin levels, and its development of techniques (partially through purchase from C.H. Boehringer Sohn Company) to reduce dioxin levels during the manufacturing process. One question of fact is whether this knowledge, if disclosed to the government, might have made a difference in the government's decisionmaking process.

Related questions of fact are the actual dioxin levels in Dow's product and the actual hazards involved in the use of the products at different levels of dioxin. Much of this may depend upon whether or not Dow's self-imposed maximum contamination of 1 ppm is or was safe, and this, too, presents a question of fact. Arguably, if Dow was selling a clean "safe" product to the government, then it told the government everything it needed to know. Of course, if the product was clean and safe, Dow would win

on the causation issue as well, because a clean and safe herbicide, by definition, would not cause the injuries plaintiffs claim to have suffered from Agent Orange.

T.H. Agriculture & Nutrition Co.

T.H. supplied the government with Agent Orange pursuant to contracts dated June 28, 1967, March 1, 1968, and May 20, 1968. As with Dow, the government established the specifications for the delivered product, and T.H. perfomed to those specifications. T.H. had manufactured 2,4,5-T for commercial sale as a herbicide prior to 1967. It did not make TCP but rather purchased it from other chemical companies.

According to its brief, T.H.'s first knowledge of any problems associated with 2,4,5-T occurred in 1964. In December of that year, Dr. David Groth of the Public Health Service wrote to T.H. requesting samples of 2,4,5-T. The letter stated that 2,4,5-T was associated with chloracne and that it was suspected that dioxin was the culprit. Groth stated that he was attempting to develop a method to isolate the contaminant.

In December 1964, Lindley S. DeAtley, a Vice President of Research and Development for T.H., wrote to Dr. R.C. Dosser, Laboratory Director at Dow, telling him of Groth's letter. Dosser replied in a telephone call that there might be some methods of production which led to a toxic compound. By January 1965, DeAtley had concluded that T.H. should conduct some tests of its own. At this time, T.H. was not yet a government supplier of Agent Orange.

On February 19, 1965, DeAtley and D.W. Fuhlhage, T.H.'s Supervisor for Process Development, visited Dow's Midland plant. The minutes of the meeting indicate that

DeAtley and Fuhlhage learned that cases of chloracne had recently been more severe, and that Dow had its workers changing clothing and showering at mid-shift.

T.H. admits that it had cases of chloracne among its workers, but claims that it did not know the cause until December 1964 at the earliest. T.H.'s argument is that by June 1967 when it first became a government contractor, the government certainly knew as much as it did. In June 1967, when T.H. negotiated its first contract, it did tell the government that there was a chloracne problem in the manufacturing process and that this was factored into the price.

As in the case of Dow, questions of fact remain with respect to T.H.'s assertion of the government contract defense. The level of dioxin in T.H.'s Agent Orange is not clear. According to plaintiffs, T.H. has not produced its records on dioxin levels, except for the years 1970 and 1971. Samples tested at Gulfport, Mississippi, indicate a level that went as high as 4.1 ppm. This raises a question of fact as to the potential for harm of T.H.'s product.

Plaintiffs emphasize the fact that T.H. knew that gas chromotography could determine dioxin level, but never told the military about it even after it began to supply Agent Orange to the government. Nor did it tell the government that its chloracne manufacturing problem was probably caused by dioxin, or that the contaminant very likely carried over into the delivered Agent Orange. Whether this information might have made a difference in the government's decisionmaking process is an issue of fact.

Uniroyal, Inc.

Uniroyal sold Agent Orange to the government pursuant to three contracts between October 6, 1966 and

March 1, 1968. Uniroyal's delivered product, like that of the other moving defendants, complied with specifications established by the government. It appears to be undisputed that the product sold was not manufactured by Uniroyal, but rather, was supplied to Uniroyal by a Canadian subsidiary, now named Uniroyal, Ltd. (Ltd.). Uniroyal denies having had any knowledge of the toxicity of 2,4,5-T or that there were any health hazards connected with Agent Orange. Uniroyal has not presented evidence of the actual level of dioxin contamination of its product.

The only evidence of Uniroyal's knowledge of chloracne problems is found in a memo from Ltd. to Uniroyal dated June 11, 1962, which states that five employees at the Clover Bar plant in Canada had symptoms of chloracne. A reply affidavit of Arthur Gorman, technical liaison to the Ltd. plant at the time, states that the Clover Bar facility did not produce either TCP or 2,4,5-T in 1962. The inference is that this memo has nothing to do with this case.

There are at least two issues of fact with respect to Uniroyal which preclude summary judgement in its favor. The first concerns the memo of T.H. Evans of Ltd. dated August 10, 1965. This memo was found in the files of Walter Harris of Uniroyal who stated that he did not receive it until 1968. Evans stated in his affidavit that he did not send it to Uniroyal, and Arthur Gorman of Ltd. stated that copies of the Evans memo were not sent to Uniroyal until 1968. The actual date that Uniroyal received it, however, presents a triable issue of fact.

The memo is important because it contains Evans' description of his visit to Dow's Midland plant in 1965 and the discussions he had with Dow scientists concerning chloracne problems and dioxin. If a jury were to find that Uniroyal received the memo in 1965, then Uniroyal knew

much more about Agent Orange use than it now claims it knew when it entered into its first contract with the government in 1966.

The second issue of fact is whether Uniroyal is chargeable with the knowledge of its subsidiary, Ltd., because of their corporate relationship. While I do not fault Uniroyal for its irritation at plaintiffs' eleventh hour argument here, I do believe that plaintiffs and Uniroyal's cross-claiming co-defendants should be permitted to introduce evidence, if they can, that the two corporations were really the same entity, assuming without deciding the validity of Uniroyal's argument that there is a presumption of separateness, *see Luckett v. Bethlehem Steel Corp.*, 618 F.2d 1373, 1379 (10th Cir. 1980); *Bendix Home Systems, Inc. v. Hurston Enterprises*, 566 F.2d 1039, 1043 (5th Cir 1978); *Williams v. McAllister Brothers, Inc.*, 534 F.2d 19, 22 (2d Cir. 1976). If the parties intend to pursue that line, I expect that they will do so in good faith and not just waste the court's time or attempt to confuse the issues. Counsel are reminded that 28 U.S.C. § 1927 (Supp. V) provides that an attorney "who so multiplies the proceedings in any case unreasonably and vexatiously may be required by the court to satisfy personally the excess costs, expenses, and attorneys' fees reasonably incurred because of such conduct." *See Kline v. Wolf*, 702 F.2d 400, 405 (2d Cir. 1983).

Riverdale Chemical Company

Riverdale states that it manufactured Agent Orange pursuant to a contract, that the government set the specifications, that it performed to specifications, and that it knew of no health hazard connected with Agent Orange.

Riverdale's motion for summary judgment is unopposed, except by its co-defendants who argue merely that it is

too early to grant summary judgment for Riverdale. However, as Riverdale points out in its reply memorandum, opposition to a summary judgment motion "must set forth specific facts showing that there is a genuine issue for trial." Fed.R.Civ.P. 56(e).

The party opposing summary judgment must offer "some competent evidence that could be presented at trial showing that there is a genuine issue as to a material fact." Wright & Miller, *Federal Practice and Procedure: Civil* § 2727. No such evidence has been presented, and there are no other circumstances as to why summary judgment cannot be fairly granted now to Riverdale.

Hoffman-Taff (Missouri)

Hoffman-Taff is in the same situation as Riverdale, and for the same reasons is entitled to summary judgment in its favor.

Thompson Chemical Corporation

Originally, Thompson declined to bid for Agent Orange contracts. Acting under appropriate statutory authority, The Defense Production Act of 1950, Sept. 8, 1950, ch. 932, 64 Stat. 798, amended, June 30, 1966, 80 Stat. 235 (current version at 50 U.S.C. App. §§ 2061 *et seq.*) however, the government required Thompson to supply Agent Orange pursuant to two contracts dated April 19, 1967 and May 24, 1968. It supplied 333,685 gallons between September 1967 and January 1969. As reflected in test results, the dioxin content of its product ranged from .1 to .3 ppm.

There is no evidence that Thompson knew of any toxicity problems associated with the use of any of its products up to the time that the goverment required it to produce

Agent Orange. The company had no testing facilities on its premises. William T. Thompson, president of the corporation, testified that he had never heard of dioxin until recently.

Soon after it began to manufacture Agent Orange, Thompson experienced an incident that caused a few of its employees to develop what was believed to be chloracne. The principal evidence of Thompson's knowledge of this health hazard is found in two internal memos of Dow Chemical Company dated February 1967. The first states that M.S. Buckley, now deceased, Technical Director of Thompson, requested information from Dow to assist him in dealing with a "severe chloracne problem" among some of Thompson's employees. The second memo, written by V.K. Rowe, indicates that he did not give Buckley a very detailed description of what caused the problem because, in his words, "it was quickly apparent that Mr. Buckley had little understanding of the toxicological aspects of his problem. Had he asked for methods, etc., I would have agreed to send them to him."

There is no claim that Thompson disclosed this production accident to the government; however, the government already knew of similar and more serious problems that had occurred at Monsanto and Diamond Alkali, and, possibly, the government knew of Dow's 1964 chloracne problem.

At most, this incident establishes Thompson's knowledge of possible health hazards related to the manufacture of Agent Orange, something the government already knew. It establishes no knowledge in Thompson of hazards to users. Plaintiffs would have me infer such knowledge, perhaps even infer that the problem was discussed in the telephone conversation between Buckley

and Rowe. The evidence presented, however, does not support the inference but instead invites mere speculation, particularly when we consider that the deceased Mr. Buckley would be unavailable to testify.

On the other side of the knowledge comparison, it is clear that by 1967, when Thompson first contracted to manufacture Agent Orange, the government had a significant amount of knowledge about dioxin, its contamination of 2,4,5-T, and its association with chloracne and some other health problems. Without question, the government's level of knowledge greatly exceeded that of Thompson in 1967.

Plaintiffs also argue that Thompson had knowledge of and the discretion to use alternative methods of manufacturing Agent Orange. Thompson points out, accurately, that there is no evidence to support that assertion. Even assuming it to be true, however, there is no evidence that Thompson knew of any risk to users that would call for the use of an alternative manufacturing method, and Thompson itself denies knowledge of any such risk. A party opposing summary judgment cannot rely on mere innuendo to defeat the motion. *See Vantage Point, inc. v. Parker Brothers, Inc.*, 529 F.Supp. 1204, 1213-14 (E.D.N.Y. 1981), *aff'd*, 697 F.2d 301 (2d Cir. 1982).

Under these circumstances, I conclude that Thompson has established there is no issue of material fact remaining for trial on the government contract defense, and that Thompson is therefore entitled to summary judgment.

Hercules, Inc.

Hercules supplied to the government compounds containing 2,4,5-T pursuant to contracts dating from May 8,

1964 through May 20, 1968. There is no evidence in the record that Hercules knew anything concerning chloracne or other health problems related to the production of 2,4,5-T during the 1940s or 1950s. Dr. John P. Frawley, Hercules' general manager of Health, Environment and Safety, who has been with Hercules since 1956, testified at his deposition that he did not learn of Monsanto's 1949 chloracne problems until February 1965. With respect to Diamond Alkali's explosion in 1960, Frawley testified that he knew of the explosion but not of any toxicity associated with it.

Hercules began producing phenoxy herbicides in 1961. On July 3, 1963 Frawley wrote to V.K. Rowe of Dow concerning a request by Dr. John Leary of the United States Department of Agriculture that the chemical companies do some testing of phenoxy herbicides. Plaintiffs contend that this letter is evidence of Hercules' knowledge of the problems associated with 2,4,5-T. However, as Frawley points out in his answering affidavit, the few problems of alleged health hazards mentioned in the letter relate to 2,4-D, not to 2,4,5-T. The only reference to 2,4,5-T concerned a lawsuit in which the plaintiffs were unsuccessful. Further, with the exception of two inconclusive incidents involving two childen who ate sprayed fruit and some workers who worked in a sprayed area, plaintiffs present no concrete evidence of Hercules' knowledge of any problems prior to March 1965.

Frawley states that the first knowledge he had of industrial health problems associated with the production of 2,4,5-T occurred in February 1965, when he was told by Dow of its chloracne problem. In March 1965, Frawley attended the Dow meeting, where he received Dow's analyses of Hercules' product. They showed a very low

level of dioxin. Later in 1965, Hercules improved its process of production so as to eliminate even the low dioxin level, and Hercules began to test its own product for dioxin contamination.

Dr. Frawley states in his affidavit that to his knowledge Hercules never had a cause of chloracne amongs its workers from 1961 until 1970 when it ceased production. Further, he states that Hercules learned of possible teratogenicity only in 1969 when the government released the Bionetics Report. Plaintiffs have presented no evidence to contradict this.

From January 1966 through May 1970 Hercules' product contained no measurable dioxin except on one test in September 1966 when it measured .1 ppm. The results of U.S.D.A. tests in 1970 also showed no measurable dioxin. Hercules states in its reply brief that the only Hercules 2,4,5-T containing more than a trace amount of dioxin was tested in 1965 and was not sold to the government. Plaintiffs do not seriously contend that Hercules' product was contaminated by any significant amount of dioxin.

The lack of dioxin in Hercules' product leads to the conclusion that no issue of fact exists with respect to the relative knowledge of Hercules and the government. As will be discussed *infra*, since its product was dioxin-free, Hercules had no knowledge of harm from dioxin contamination caused by its product and thus did not know more than the government about hazards associated with the use of its product. Consequently, its motion for summmary judgment is granted.

DISCUSSION

As indicated at the outset of this opinion, in pretrial order no. 33, I stated that the government contract defense

would entitle a defendant to judgment dismissing all claims if the defendant proved:

> 1. That the government established the specifications for "Agent Orange";
>
> 2. That the "Agent Orange" manufactured by the defendant met the government's specifications in all material respects; and
>
> 3. That the government knew as much as or more than the defendant about the hazards to people that accompanied use of "Agent Orange".

534 F.Supp at 1055. Elaborating on the knowledge element, I stated that a defendant could not avail itself of the defense if it "was aware of hazards that might reasonably have affected the government's decisions about the use of 'Agent Orange' ", *id.* at 1057, and failed to disclose them to the government, *id.* at 1058.

Each defendant has established the first two elements of the defense – that the government established the specifications for Agent Orange, and that the Agent Orange manufactured by the defendant met those specifications in all material respects. Accordingly, pursuant to Federal Rules of Civil Procedure 56(d), I have determined that there is no substantial controversy with respect to any moving defendant over those two facts, and they are deemed established for purposes of the trial of this action. These are the only two facts I am determining for future purposes. All other discussion of facts and evidence in this decision relates only to these summary judgment motions.

Plaintiffs argue with considerable force that because defendants did not share with the government *all* their

knowledge about Agent Orange, the resulting ignorance on the government's part affected not only what was put into or omitted from the specifications but also the standards applied to determine whether a particular defendant's product conformed to the specifications. I view this more as a means of talking about the central problem of knowledge than as a proper description of the elements of the government contract defense. For purposes of my discussion of that defense and its analysis, the various problems arising out of differing levels of knowledge between the government and the defendants are encompassed in the third element.

With respect to that third element – whether the government knew as much as or more than the defendant about the hazards to people that accompanied use of Agent Orange – four of the defendants, Riverdale, Hoffman-Taff, Thompson, and Hercules, have established that there is no triable issue and each of them is entitled to judgment dismissing all complaints and all cross-claims against it on the ground that the government contract defense shields it from liability.

As to all four of these defendants there is no triable issue over knowledge. As to each, on the record before the court the government clearly knew as much as or more than the defendant about any hazards to people that accompanied use of that defendant's product. Riverdale and Hoffman-Taff both deny any knowledge of hazards, and no other party had controverted their denials. Thompson was essentially an unwilling producer of Agent Orange who knew virtually nothing about its hazards. Clearly, in 1967 when it first began to supply the herbicide, the government's knowledge of the hazards of Agent Orange exceeded that of Thompson. Equally clearly, the govern-

ment's knowledge at that time was increasing more rapidly that was Thompson's.

Hercules' dismissal rests on the same ground, but follows for different reasons. Unlike Riverdale, Hoffman-Taff and Thompson, Hercules was aware of possible dioxin contamination of 2,4,5-T. But since the Agent Orange produced by Hercules was free of the contamination, there were no dioxin-related hazards accompanying the use of its product about which Hercules could have had knowledge.

Summary judgment is denied with respect to Dow, T.H., and Uniroyal on the ground that on the papers before the court triable issues of fact are presented on the question of relative knowledge. Following our earlier schedule, this would have meant that the trial of the government contract defense would proceed for these defendants together with Montsanto and Diamond Shamrock on June 27, 1983.

However, for a combination of reasons I have concluded that a separate trial of the open issues on the government contract defense with respect to the remaining defendants is no longer appropriate. A separate trial might prejudice the plaintiffs by over-emphasizing the importance of this narrowly drawn defense as it has evolved in its present context; it might prejudice the defendants by requiring presentation of the defense based on hypothetical questions of causation that ultimately would have to be developed on a full record; and it would prejudice both sides due to the additional time, effort, and expense that would be required.

As this case has developed we all have raised our level of knowledge concerning this somewhat unique litigation. In

1980 when I entered an order anticipating phased trials, the idea of a separate trial of the fact issues raised by the government contract defense seemed appealing. It had the advantages of focusing on what appeared to be a discrete segment of the evidence with a possible early termination of the lawsuit and a saving to all parties of considerable unnecessary expense. The chief disadvantage of the separate trial appeared to be a relatively insignificant one of having to assume hypothetically certain facts about liability. On balance, the goals of obtaining a just, speedy, and inexpensive determination seemed to be well served by working toward a separate trial of the government contract defense. The premise underlying that conclusion was that the elements of the defense would be uniquely suited to consideration and adjudication separately and apart from the issues of liability, causation, and damages. In addition, it seemed to me at the time that as a practical matter discovery on those discrete issues would be rather narrow compared to the discovery that some of the other fact issues presented by this action might require.

What has actually happened, however, is that, as we all have learned more about the development and use of Agent Orange in Vietnam, the issues in the action have become clearer. Plaintiffs undoubtedly strongly emphasize a negligent failure to warn as a basis for liability. But when the "knowledge" factor of the government contract defense is placed alongside a liability theory of a negligent failure to warn, the issues, unfortunately, no longer remain discrete or separate. On the contrary, they tend to merge to such an extent that the legal test for liability under a failure-to-warn negligence theory would fully encompass all the knowledge issues of the government contract defense except for the final test of whether

the knowledge "would have" as opposed to "might have" affected the military's handling of Agent Orange purchases and use.

Separate application of the government contract defense has been possible as to the four defendants in whose favor I will be granting summery judgment. As to the remaining defendants, however, the central point of the dispute seems to have shifted. Whether or not the presence of a dioxin contaminant in Agent Orange gives rise to liability is complicated by a variety of circumstances, including the relative ignorance of virtually everyone about dioxin when our involvement in Vietnam commenced, the increasing level of everyone's knowledge about dioxin at varying rates until Agent Orange was no longer used in Vietnam, the changing level of technology which enable the scientist to detect and measure smaller and smaller concentrations of dioxin over the relevant time period, and the dynamic, constantly changing attitutes of the military and political authorities about the use in Vietnam of herbicides.

The problem is illuminated by comparing the situation of Hercules with that of Dow. Hercules attended the 1965 meeting called by Dow to consider the problem of dioxin contamination in 2,4,5-T. Beginning in January 1966 the 2,4,5-T produced by Hercules was, with one exception, free of any detectable dioxin. This meant that if dioxin was present, it was there in concentrations of less than one tenth of one part per million. In one month out of the ensuing 39 months of production, Hercules' 2,4,5-T did show dioxin contamination, but at the minimum measurable level: .1 ppm. That one month when a trace was found becomes *de minimis* both as to the quantity affected and the degree of contamination when compared with the

dioxin contained in the other companies' products. Since Hercules had *no* knowledge of its product creating hazards to people, its knowledge could not have exceeded that of the government, and Hercules has established the third element of the government contract defense, thereby entitling it to summary judgment in its favor.

Dow took an approach to its production that differed from that of Hercules. Instead of producing a dioxin-free product, it adopted a self-imposed contamination standard of 1 ppm for its 2,4,5-T. At the March 1965 meeting, Dow urged the others in attendance to adopt that single standard and to use it as the industry standard for 2,4,5-T. From the evidence in the present record it appears that Dow believed that standard to be within a reasonable margin of safety so that hazards to people would be eliminated.

The test results in the record show that neither Diamond Shamrock nor Monsanto followed Dow's recommendation. Dow itself lived up to its self-imposed standard, however, with the result that the Agent Orange it produced contained .5 ppm. It may eventually appear that the 1 ppm standard was safe. If so, then Dow could succeed in its government contract defense, just as Hercules has now done, by showing the safety of its product. In that event it could also succeed against any liability claim based on an allegedly defective product. The fact remains, however, that we do not know whether Dow's self-imposed 1 ppm standard was a safe level for dioxin contamination of the 2,4,5-T. Indeed, we do not know whether contamination even at the level of 140 ppm, the highest level for any product at any time reported in the papers now before the court, would produce Agent Orange that was hazardous to people. Thus, Dow's adoption of the 1 ppm standard raises an issue of fact that precludes summary judgment.

It may also eventually appear that if Dow had revealed its concerns about dioxin to the government in 1965 the military would have adopted the Dow 1 ppm standard regardless of what our present knowledge tells us about the safety of that standard. In that event, Dow would succeed against a claim of negligent failure to warn, but not necessarily on its government contract defense because the defense would fail merely if the information "might have affected" the military's decisionmaking. Rather, Dow would succeed on the causation issue, because its failure to disclose its concerns about dioxin would not have affected the military's judgment in using the product.

If we were to proceed at this time with a separate trial of the government contract defense as to those defendants who remain in the case, we would on that trial have to determine whether dioxin contamination of Agent Orange was harmful, and if so, in what concentration did it become harmful, and, if the defendant's product was unsafe and if the defendant had told the military in 1965 of Dow's fears about the effect of dioxin contamination, whether the military might have stopped using Agent Orange, or changed its specifications to provide a maximum level of contamination, or changed its method of using Agent Orange in the field, or imposed safety precautions in connection with its use in the field.

A trial to answer these questions would necessarily involved most of the evidence needed for trial of the issues relating to liability and general causation. Under these circumstances I conclude that justice would be served by combining what remains of the government contract defense issues with a trial on liability and general causation which will be scheduled after completion of the remaining discovery necessary for those issues.

Case Management

I will continue the action under the supervision of the special master, Soi Schreiber, who has thus far provided extraordinary, dedicated and effective assistance in bringing the case this far. His authority will continue as before, 94 F.R.D. at 174-76, with the objective being a trial at the earliest reasonable date covering the issues of liability, general causation, and the government contract defense. I will request the special master to recommend an appropriate timetable for the remaining discovery, any further motions, preparation of a pre-trial order, and trial. I will also request from him as quickly as possible a formal recommendation with respect to the nature and form of class certification. And, despite the determined resistance to class certification by some of the dismissed defendants, I will nevertheless in the interest of justice defer entry of summary judgment on the present motions until after the class has been certified.

Confidentiality of Motion Papers

I will also ask the special master to reconsider with counsel whether the need for secrecy remains, or whether some of the restrictions on public disclosure of the affidavits, documents, and depositions cannot be lifted. From what I see on television and read in the newspapers, it appears that some counsel and some parties in this case do not take seriously either their ethical obligations or the orders of this court with respect to non-disclosure of information. I also understand that due to careless designations on the filing of some papers, some information which was intended to be under seal ended up in the hands of a newspaper reporter. Other documents as to which there have been no slip-ups in filing or designation for sealing, have also been quoted directly in newspaper articles, thereby

confirming my own view in the circumstances of this case of the futility of attempting to keep information confidential.

Although keeping discovery materials subject to the protective order previously entered in this case, pretrial order no. 43, 96 F.R.D. 582 (E.D.N.Y.1983), has already served several worthwhile purposes, I am not certain that those purposes are furthered by continuing the sealing with respect to the motion papers on these summary judgment motions. I request the special master to review the matter again with counsel and make an appropriate recommendation to me.

CONCLUSION

In summary, the motions of defendants Hercules, Thompson, Riverdale, and Hoffman-Taff for summary judgment on the ground of the government contract defense are granted, and all claims and cross-claims against those defendants based on their having supplied Agent Orange to the government pursuant to contract are dismissed. The motions of Dow, T.H., and Uniroyal are denied due to the existence of genuine issues of material fact precluding summary judgment. The trial of the government contrct defense with respect to the five remaining defendants, Dow, T.H., Monsanto, Diamond Shamrock, and Uniroval, will be combined with the trial on liability and general causation.

SO ORDERED.

ON MOTION FOR REARGUMENT

Defendants Dow Chemical Company, T H Agriculture & Nutrition Co., Inc, and Uniroyal, Inc., move for reargument of the court's order dated May 20, 1983, which

denied their motions for summary judgment on the government contract defense. After careful consideration of all of the materials submitted, the motions are denied.

SO ORDERED.

IN RE "AGENT ORANGE" PRODUCT LIABILITY LITIGATION.

MDL No. 381.

United States District Court,
E.D. New York

Sept. 25 1984 as Modified.

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Arvin Maskin, Dept. of Justice, Washington, D.C., for third-party defendant United States.

WEINSTEIN, Chief Judge.

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PREFACE AND SUMMARY

In 1979 a class action was commenced charging the United States government and a major portion of the chemical industry with deaths and dreadful injuries to tens of thousands of Vietnam veterans who came in contact with herbicides used in the war in Southeast Asia. The suit also claimed that as a result of the veterans' exposure, their children suffer severe birth defects. After five years of numerous motions and extensive discovery a tentative settlement was reached on the eve of trial.

The sole question before this court is whether the case against the chemical companies should now be settled. Eleven days of nationwide hearings were conducted to give the class members themselves an opportunity to be heard on the merits of the settlement. After weighing the uncertainties and legal obstacles that would accompany years of protracted litigation were the case to go to trial, the court has concluded that the settlement should be approved. This approval is subject to reconsideration after further hearings for the reasons indicated below. See the discussion under II, B, 1, j, Inability to Decide Whether to Accept Settlement Without Knowing How it Would be Distributed and How Much Would be Spent in Attorneys' Fees.

The many legal issues are unique and the factual issues unresolved by the scientific communities addressing them. But it is neither fact nor law that makes this decision such a difficult one – rather, it is the deeply charged emotions that surround and engulf the litigation.

In listening to hundreds of witnesses around the country and reading the poignant letters of many veterans, their wives and parents, a repeated refrain makes it clear that more than money is at stake. The veterans feel that out of

love of country they went to its aid and fought bravely in a brutal war. In return, they believe, they were sprayed with chemicals that insidiously are destroying them. They were vilified by their countrymen on their return because the war became unpopular. Their perception is that they are denied proper treatment by the Veterans Administration to the point where many of them shun the VA's medical and other facilities. Their families suffer as they waste away. And, perhaps even more important, they fear that they have been damaged genetically so that many choose to have no children or live in the despair of having sired children with birth defects who may spread this genetic damage to future generations.

Vietnam veterans and their families desperately want this suit to demonstrate how they have been mistreated by the country they love. They want it to give them the respect they have earned. They want it to protect the public against future harm by the government and chemical companies. They want a jury "once-and-for-all" to demonstrate the connection between Agent Orange and the physical, mental and emotional problems from which many of them clearly do suffer.

The court has been deeply moved by its contact with members of the plaintiffs' class from all over the nation and abroad. Many do deserve better of their country. Had this court the power to rectify past wrongs — actual or perceived — it would do so. But no single litigation can lift all of plaintiffs' burdens. The legislative and executive branches of government — state and federal — and the Veterans Administration, as well as our many private and quasi-public medical and social agencies, are far more capable than this court of shaping the larger remedies and emotional compensation plaintiffs seek.

Within the sharply limited judicial role we must ask whether the settlement of the litigation proposed by the parties" representative below we tentatively hold that it is. It gives the class more than it would likely achieve by attempting to litigate to the death. It provides funds to help at least some men, women and children whose hardships will be reduced in some small degree. It does represent a major step in the essential process of reconciliation among ourselves.

This opinion first summarizes the terms of the settlement and outlines why the settlement as proposed appears reasonable for plaintiffs, defendants and the public. *See* Introduction, *infra*. It then sets forth the procedural history of the case, including a summary of opinions already issued by the court on the issues of subject matter jurisdiction, class certification, choice of law and government liability. *See* I, Procedural History, *infra*. The opinion then discusses the Fairness hearings held by the court to solicit the views of class members on the settlement. In this section the court discusses the legal bases and requirements for class action settlement and the reactions of the class members to the settlement as expressed at the hearings and in other communications to the court. *See* II, Fairness hearings, *infra*.

Sections III and IV of the opinion discuss in detail the factual and legal obstacles that would be confronted by both plaintiffs and defendants if the case were to go to trial.

Section III, Factual Problems with Claims, summarizes the evidence that the plaintiffs have adduced in support of their allegations. As the opinion indicates, at best the evidence is inconclusive. This is due in part to the difficulty of proof in any mass toxis tort litigation and in part to the weakness in proof of causal relationship, at least as

demonstrated in the epidemiological studies completed to date. Section III concludes with a description of the extensive knowledge the government had in the 1960s concerning the dangers of dioxin.

The legal relevance of this knowledge is developed in section IV. Pursuant to the government contract defense, a defendant could avoid liability by showing sufficient government knowledge of the dangers of Agent Orange. The level or government knowledge was such that were the issue put to a jury, there is a substantial probability that defendants would prevail.

Other legal problems posing major obstacles to plaintiffs' recovery are also discussed in section IV, including Statute of Limitations and Failure to Determine Who Was Harmed and Who Caused harm. Although a defensible argument can be made in favor of the application to the entire class of a single statute of limitations, it is at least questionable whether and appellate court would accept such a rationale. Thousands of plaintiffs could, therefore, be barred from recovery, regardless of the merits of the case.

The portions of section IV on Failure to Determine Who Was Harmed and Who Caused Harm deal with two interrelated problems. First, plaintiffs concede that because of the way the different defendants' Agent Orange was mixed before spraying, they are unable to satisfy the traditional tort requirements that they prove not only that they were injured, but also that such injury was caused by an *individual defendant*. Second, it is likely that because of the epidemiological nature of much of the evidence, no *individual plaintiff* would be able to prove that his or her particular adverse health effects are due to Agent Orange exposure. It may be possible — through the use of the class action device — to overcome this obstacle by mark-

ing a single, class-wide determination of liability and by distributing the damages charged to all defendants as a group among all class members on a pro rata basis. At the present time, however, it is doubtful whether the legal system is ready to employ this device except , perhaps, as part of an overall settlement plan voluntarily entered into by the pa ies.

The discussion of why the settlement appears to be reasonable concludes with a description of the statutory obligations of the United States to protect and compensate the class. *See* section V, *infra*. Government action – present and potential – is relevant to the discussion since federal aid for the class bears directly on the overall adequacy of the settlement.

It is important to emphasize – as the opinion does in the concluding section – that a tentative finding that the settlement is fair, reasonable and adequate, is but the first step in granting benefits to class members. Future actions include the awarding of attorneys' fees, the resolution of plaintiffs' and third party claims against the government and, most importantly, the preparation of a plan outlining how the settlement fund will be used to assist eligible class members.

INTRODUCTION

On May 7, 1984, the date on which jury selection was to begin, plaintiffs, on behalf of a class of Vietnam veterans and members of their families, agreed with defendants to settle their claims against the defendant chemical companies. *See* Appendix A, Settlement Agreement. Pursuant to the stipulation of settlement, defendants have agreed to pay to the class $180 million plus interest in a manner directed by the court. Interest began accruing from May 7, 1984, at the rate of some $60,000 per day.

Defendants have not admitted any liability in connection with plaintiffs' claims. Both sides have reserved whatever rights and claims they have against the United States and any person not a party to this class action.

The mechanics of administering the settlement fund will be dealt with in a separate opinion to be issued after further hearings. Some preliminary and tentative conclusions on this subject are set forth in VII, A, Plan for Distribution of Fund, *infra*.

The court held extensive hearings on the fairness of the settlement in New York, Chicago, Houston, Atlanta and San Francisco. *See* Appendix B, Order for Hearings on Fairness of Settlement and Attachments. It heard almost 500 witnesses and considered hundreds of written communications from veterans, members of their families, veterans' organizations and others. It read a large part of the relevant literature, taking judicial notice of its substance. It had the benefit of listening to sound recordings of sessions held by New Jersey's Commission on Agent Orange at various places in that state. It considered the extensive material in the court's files and the many published opinions on the subject. *See* Appendix C, Published Opinions on "Agent Orange" Litigation. Finally, it studied the extensive briefs submitted by counsel and others.

For the reasons indicated at greater length below, the settlement must be tentatively approved as reasonable under the law. There are many considerations that make this settlement desirable from the plaintiffs' viewpoint. First, the scientific data available to date make it highly unlikely that, except perhaps for those who have or have had chloracne, any plaintiff could legally prove any causal relationship between Agent Orange and any other injury,

including birth defects. Second, the law that would need to be established is unique and would almost certainly result in repeated trials and appeals, with the likely ultimate result being no recovery by any plaintiff. Third, the suit was being financed by plaintiffs' lawyers who had already expended millions of dollars in disbursements and time; a full trial, appeals and retrials would have lasted years and would have required the expenditure of many more millions of dollars with serious doubts about the plaintiffs' attorneys' ability to finance the litigation properly. Fourth, benefit to plaintiffs from an ultimate recovery, if any, would not be available for many years. And, fifth, a result adverse to the plaintiffs in the litigation might have an unfavorable impact on evaluation of the Agent Orange claims by Congress and the responsible executive departments which, in the final analysis, must take responsibility for the medical and other care of servicepersons and their families.

From the defendants' point of view the settlement is reasonable: First, defending the case would have cost more tens of millions of dollars in legal fees and expenses plus the time of employees and executives who could be doing more productive work. Second, though slight, there was a possibility of an ultimate finding of liability with claims totalling billions of dollars. Third, an ongoing emotional trial would have created adverse publicity (whether or not uinfair), perhaps causing a spillover effect against defendants' other products. Fourth, continued litigation and the possibility of an adverse result has a negative influence on the financial community, causing greater financing expenses as the companies become less attractive to investors. And, fifth, representatives of the defendants, like other Americans, have a sense of compassion and respect for veterans of the Vietnam War and their families

who, because of circumstances entirely beyond their control, have been treated with less favor and respect than they should have been. This is a matter of concern to all citizens, including those responsible for defendants' decisions.

From the public's point of view, settlement is desirable for three reasons. First, whether or not the defendants have formally admitted some responsibility for defects in their products and for possible injuries to some plaintiffs, the public can justifiably assume, for perhaps the first time, that there is some merit to the claims of those exposed to Agent Orange that they are suffering because of their war and postwar experiences. In any event, the publicity attendant on the settlement and the Fairness Hearings has alerted the nation to the needs of many Vietnam veterans and their families. Second, the bitterness of a long, hard-fought trial is avoided; plaintiffs and members of the public can devote their energies and talents to using the settlement fund to help the class while obtaining further aid from public and private sources. Finally, trial and appeals of this case would require an expenditure of hundreds of thousands of dollars of court funds and engage the time of judges and court personnel for thousands of hours that now can be spent in the administration of other aspects of the criminal and civil justice systems.

This has been one of the most complex litigations ever brought. Some 600 separate cases have been sent to this district from all over the country with an estimated fifteen thousand named plaintiffs. Millions of pages of documents and hundreds of depositions of witnesses have been collected. The docket sheet of this court has some 4000 separate entries respecting these related cases. Hundreds of motions have been heard and hundreds of oral directions given by the court, special masters and

magistrate in the course of preparing the case for trial. The court, magistrate and special masters have held meetings with counsel from all over the country on an almost daily basis. Hundreds of scientists, government personnel private executives, lawyers and others have devoted a great deal of time to this litigation. It is unlikely that further expenditure of time and money will be productive. It is time to bring this dispute to a close.

Since practically all the parties are before the court, a binding settlement ending the controversy as to veterans and their families is possible.

There does remain the question of the government's role. It contends that it expends some $70,000,000 a year to treat those veterans who claim Agent Orange exposure, even though causality has not been shown. Nevertheless those testifying at the Fairness Hearings were almost unanimous in expressing dissatisfaction with the medical services supplied by the government to Vietnam veterans claiming Agent Orange related injuries. The government is also spending some $150,000,000 on research to determine the effects of Agent Orange and of service in Vietnam. Moreover, legislation recently adopted by each house of Congress makes explicit the promise of further aid if a causal connection can be shown. It is, therefore, a matter of some regret to many veterans that the government decided not to participate in any settlement discussions. *See* Appendix D. Letter of Government, dated April 24, 1984, Refusing to Participate in Negotiations. As a result, further discovery, other pretrial preparations and possible trials and appeals continue to burden the parties and the courts, disturb veterans and their families and roil the conscience of the nation.

I. PROCEDURAL HISTORY

On February 19, 1979, plaintiffs filed a 162-page complaint in this district on behalf of named and unnamed Vietnam veterans and members of their families who claimed to have been injured as a result of the veterans' exposure to various phenoxy herbicides, including Agent Orange. *See Dowd v. Dow Chemical Company,* 79 C 467. Plaintiffs alleged, among other things, that defendants negligently manufactured and sold to the government for use in Vietnam herbicides that contained 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD or dioxin), thought to be one of the most toxic substances known to man. *See, e.g.,* R. Bovey & A. Young, *The Science of 2,4,5,-T and Associated Phenoxy Herbicides* 134 (1980); *United States v. Vertac Chemical Corp.,* 489 F.Supp. 870, 876 (E.D.Ark. 1977). Plaintiffs also based their claims on theories of strict liability, breach of warranty, intentional tort and nuisance. According to plaintiffs, the veterans' exposure to TCDD-contaminated herbicides in Vietnam resulted in injuries, such as chloracne, various systemic diseases including soft tissue sarcoma and porphyria cutanea tarda as well as miscarriages to veterans' wives and birth defects in their children. The claims of both sides and the facts are set forth in further detail in the course of this opinion and other opinions by this court and the Court of Appeals referred to *infra.*

Shortly after the first complaint was filed, eight similar cases were transferred to this district by the Judicial Panel on Multidistrict Litigation (MDL Panel) for consolidation of pretrial proceedings. Almost 600 cases originally filed in state and federal district courts throughout the country have been transferred for inclusion in this multidistrict litigation, MDL No. 381.

Similar actions which have been filed by various civilian plaintiffs have also been transferred to this district by the MDL Panel. At present there are at least six actions involving claims by civilians. The civilian plaintiffs include: a proposed class of civilians allegedly exposed to phenoxy herbicides in Vietnam, *Thornton v. Down,* C-81-005-JLQ (D. Wash.); a proposed class of thirty-five thousand civilian residents of the County of Kauai, State of Hawaii, who claim exposure to Agent Orange and other phenoxy herbicides during a testing program conducted in 1967, *Fraticelli v. Dow,* CV No. 82-0021 (D.Hawaii); civilian employees of defense contractors who were allegedly exposed to phenoxy herbicides in Vietnam in 1967, *Kjome v. Dow,* CV 83C-3876 (N.D.Ill.) and *Vaughan v. Dow,* CV No. 83-1440 (D.Ariz.); a medical doctor who served in Vietnam, in the employ of the State Department, *Hogan v. Dow,* CV-R-81-410ECR (D.Nev.); and a civilian employee of a contractor exposed to Agent Orange in 1975, *Lester v. Dow,* CV No. H-80-587 (S.D.Tex.). These actions by civilians are not encompassed in the class and are, therefore, not covered by the settlement. A motion for change in venue in *Fraticelli* was denied by pretrial order number 37 on August 5, 1982; a motion for remand was denied by the MDL Panel on September 29, 1982 and a motion for remand in this court was denied on July 25, 1984. Discovery has not gone forward in these civilian cases although much of the information gathered in the instant case will be relevant to them. *Cf. In re Cenco Inc. Securities Litigation,* 354 F.Supp. 1237, 1239 (J.P.M.D.L. 1977) (accommodation to special needs of particular cases in multidistrict litigation).

At the Fairness Hearings a number of class members indicated that they were puzzled by the fact that they had retained counsel to handle their cases near where they lived in other parts of the country, yet the litigation was being

conducted in New York. A brief description of the operation of the Judicial Panel on Multidistrict Litigation may be helpful at this point to explain why and how the cases were transferred to the Eastern District of New York. Since 1968, section 1407 of title 28 of the United States Code has provided a means for transferring related cases pending in different districts to a single district for pretrial proceedings. The savings in time and money when many cases are investigated and prepared together for disposition can be enormous.

Pursuant to the statute, the MDL Panel may, after notice to the parties in all actions in which transfer is contemplated, transfer civil actions involving common questions of fact for the convenience of the parties and witnesses and to promote the just and efficient conduct of pretrial motions and discovery. 28 U.S.C. § 1407(a). The Panel may proceed under this section on its own initiative or on motion of any party seeking transfer. 28 U.S.C. § 1407(c). A subsequent action involving questions of fact in common with actions previously transferred under section 1407 is called a tag-along action and is conditionally transferred, with notice to parties, on the basis of the hearings regarding the previously transferred actions. *See* Rules 1 and 9 of the Rules of Procedure of the Judicial Panel on Multidistrict Litigation, 89 F.R.D. 273 (1981). Any party opposing transfer of a tag-along action must file a notice of opposition within 15 days and move to vacate the conditional transfer order to prevent transfer without a further hearing. *Id. see, e.g., In re Penn Central Securities Litigation,* 374 F.Supp. 1400 (J.P.M.L. 1974).

Section 1407 is designed to promote judicial economy and avoid conflict and duplication in discovery by consolidating related actions for pretrial purposes. 15 C. Wright, A. Miller & E. Cooper, Federal Practice and

Procedure § 3861 (1976). To effectuate these purposes, the transferee court has broad powers in matters relating to management of the multidistrict case before it. Weigel, The Judicial Panel on Multidistrict Litigation, Transferor Courts and Transferee Courts, 78 F.R.D. 575, 584 (1978). Once a case has been transferred by the Panel, the transferee court assumes complete jurisdiction for pretrial purposes. It has authority to decide all pretrial motions including dispositive motions such as those for summary judgment or approval of a settlement. Weigel, *supra*, 78 F.R.D. at 582. The transferee court is also authorized to handle matters relating to class action certification in order to prevent inconsistent rulings and to promote judicial efficiency. *See In re Piper Aircraft Distribution System Antitrust Litigation*, 405 F.Supp. 1402, 1403-04 (J.P.M.D.L. 1975)

Certain types of cases are especially suited to MDL treatment, among them, antitrust cases, *see, e.g., In re Antibiotic Drugs*, 320 F.Supp. 586 (J.P.M.D.L. 1970) (transfer of 150 civil antitrust cases); mass tort actions such as aircraft disasters, *see e.g., In re Air Crash Disaster at Boston, Massachusetts on July 31, 1973*, 399 F.Supp. 1106 (D. Mass. 1975); and products liability cases such as *"'Agent Orange," A.H. Robins Co., Inc., "Dalkon Shield" IUD Products Liability Litigation*, 406 F.Supp. 540 (J.P.M.D.L. 1975) (consolidation for pretrial proceedings of 54 actions involving claims for damages arising out of use of intrauterine contraceptive devices) and *In re Celotex Corp. "Technifoam" Products Liability Litigation*, 68 F.R.D. 502 (J.P.M.D.L. 1975) (transfer of 10 actions in which plaintiffs claimed fire losses and structural damages as a result of defects in defendant's insulation material). *See also In re Aviation Products Liability Litigation*, 347 F.Supp. 1401 (J.P.M.D.L. 1972).

Section 1407 provides that the Panel shall remand each case to the district from which it was transferred at or before conclusion of the preptrial proceedings unless it has already been terminated. 28 U.S.C. § 1407(a). Most actions are terminated in the transferee court, often by settlement or by transfer by the transferee court to itself for trial pursuant to section 1404(a) (convenience of parties and witnesses) or section 1406 (proper venue). Weigel, *supra*, 78 F.R.D. at 584. *See, e.g., In re Antibiotic Actions*, 333 F.Supp. 299 (S.D.N.Y. 1971) (transfer of antitrust actions to home district of transferee judge for trial pursuant to section 1404(a)).

Common to the actions either started in this court or sent here by the MDL Panel are allegations that plaintiffs, principally American, Australian and New Zealand servicemen, were injured by exposure to Agent Orange or other phenoxy herbicides used as defoliants in Vietnam from 1961 to 1972. In 1980 a class was certified. The nature of a class action and some of its procedural implications are described in this court's prior opinions. *See In re "Agent Orange" Product Liability Litigation*, F.Supp. 762 (E.D.N.Y. 1980), *modified*, 100 F.R.D. 718 (E.D.N.Y. 1983), *mandamus denied*, 725 F.2d 858 (2d Cir.), *cert. denied*, ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). Further reference to the effect of certifying a class action is made in the body of this opinion, particularly in connection with the discussion of statutes of limitations and indeterminate plaintiffs and defenddants, *infra*.

Notice was given to the class. All members of the class were afforded the option of withdrawing from the class seeking compensatory damages; this option was not granted to the class seeking punitive damages. *See* 100 F.R.D. 718, 732 (E.D.N.Y. 1983).

In October 1983 the court, after confering with the parties, ordered the trial to begin on May 7, 1984. To assist the jury in focusing on the problems of causation the plaintiffs were directed to choose ten plaintiffs — veterans, wives and children — who had what they considered to be typical injuries, so that their claims would be litigated as characteristic of those of the class.

The Honorable Shira A. Scheindlin, United States Magistrate, was directed to control the completion of discovery on all issues and assist in preparation of a pretrial order. Special Master Sol Schreiber, Esq., who had been appointed in April 1982, had already supervised much of the discovery on the government contract defense. *See* 94 F.R.D. 173 (E.D.N.Y. 1982).

With the approval of the parties, in April 1984, Kenneth R. Feinberg, David I. Shapiro, and Leonard Garment, Esqs., all of Washington, D.C., were appointed as Special Masters to assist the parties in settling the case. Special Master Kenneth R. Feinberg had already commenced preliminary work on the issues with the knowledge of the parties that such work would be going forward.

Plaintiffs' claims against defendants Hooker, Ansul and Occidental were dismissed on the ground that those companies never designed, manufactured or marketed any phenoxy herbicides for use in Southeast Asia. 534 F.Supp. 1046, 1051-52 (E.D.N.Y. 1982). For the same reason, defendant Uniroyal Merchandising Company's motion for summary judgment was granted, 537 F.Supp. 977 (E.D.N.Y. 1982), and defendants Syntex Corporation, Syntex Laboratories, Inc., Syntex Agribusiness, Inc., and Hoffman-Taff, Inc. (Delaware) and Northeast Industries were dismissed. *See* 544 F.Supp. 808, 809-10 (E.D.N.Y. 1982) and 476 F.Supp. 928, 931 (E.D.N.Y. 1979). The

dismissal of these defendants as well as Hooker, Ansul and Occidental was conditioned upon each filing with the court a consent to renewal of the action against them by any present or future Agent Orange plaintiffs or class members in the event that the evidence showed that these companies did manufacture and sell Agent Orange to the government for use in Southeast Asia. These defendants also agreed not to raise any statute of limitations defense that included any time that passed between the date of commencement of the first of these actions and any renewal. The summary judgment motions of defendants Riverdale Chemical Company and Hoffman-Taff, Inc. (Missouri) were unopposed and, accordingly, granted. 565 F.Supp. 1263, 1272 (E.D.N.Y. 1983).

Summary judgment motions of defendant Hercules, Inc. and defendant Thompson Chemical Corporation were also granted based on plaintiffs' failure to show that these defendants' products contained dioxin. 565 F.Supp. at 1272-74. In November 1983, the court reconsidered this issue and denied the summary judgment motions of Hercules, Inc. and Thompson Chemical Corporation. Also denied were a number of jurisdictional motions by Thompson Chemical Corporation. Seven companies remain as defendants: Dow Chemical Company, Monsanto Company, Diamond Shamrock Chemicals Company, Hercules, Inc., Uniroyal, Inc., T.H. Agriculture & Nutrition Company and Thompson Chemical Corporation. Also denied were a number of jurisdictional motions by Thompson Chemical Corporation. Seven companies remain as defendants: Dow Chemical Company, Monsanto Company, Diamond Shamrock Chemicals Company, Hercules, Inc., Uniroyal, Inc., T.H. Agriculture & Nutrition Company and Thompson Chemical Corporation.

Defendants have denied that the products they manufactured and sold to the government for use in Vietnam caused plaintiffs' injuries. Defendants also contend that to the extent their products caused harm injuries occurred because of misuse by the government. Moreover, their position has been that if any liability exists, the government, not the manufacturers, is responsible because it knew as much or more than the defendants about possible dangers and assumed responsibility for any ensuing damages.

It appeared at one point that the government contract defense could be tried separately. *See* 506 F.Supp. 762, 796f (E.D.N.Y. 1980). Later, after further discovery and briefing, it became apparent that a separate trial of the government contract defense was not desirable. 565 F.Supp. 1263, 1265, 1275 (E.D.N.Y. 1983). Elsewhere in this opinion, modifying 534 F.Supp. 1046, 1054-58 (E.D.N.Y. 1982). are set out the elements of proof which defendants would have had to meet on the government contract defense. *See* IV, Nature of Liability and Relation to Defense of Government Knowledge, *infra*.

Defendants have served third-party complaints upon the United States, seeking indemnification or contribution for monies paid by defendants on plaintiffs' claims. The government moved to dismiss on the grounds that the *Feres-Stencel* doctrine barred defendants' actions. See *Feres v. United States*, 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950); *Stencel Aero Engineering Corp. v. United States*, 431 U.S. 666, 97 S.Ct. 2054, 52 L.Ed. 2d 665, *reh'g denied*, 434 U.S. 882, 98 S.Ct. 150, 54 L.Ed.2d 168 (1977). The government's motion was granted. 506 F.Supp. 762 (E.D.N.Y. 1980). Upon reconsideration the government's motion to dismiss defendants' third party complaints was granted only as to claims made

by the veterans and the derivative claims of their family members. 580 F.Supp. 1242 (E.D.N.Y. 1984). The government's motion to dismiss was denied insofar as it related to the independent claims of the veterans' wives and children. *Id.* As indicated in the court's 1980 and 1984 decisions on the issue, the law on the point is far from clear; this uncertainty enhances the desirability of the settlement.

The third-party complaints against the government for the independent claims of veterans' wives and children are still pending. They are not subject to the proposed settlement of plaintiffs' claims against defendants. In effect, the manufacturers are saying that anything they pay to plaintiffs either by award or settlement is reimbursable by the government. Plaintiffs' Eighth Amended Complaint, filed after the settlement was reached, for the first time seeks to obtain a remedy directly from the government on behalf of the class.

A. Jurisdiction

Plaintiffs originally brought this action pursuant to 28 U.S.C. § 1331, asserting that their claims arose under the statutes and common law of the United States. They argued that a private right of action could be implied from any of four statutes allegedly applicable to their claims: the Federal Insecticide, Fungicide & Rodenticide Act (FIFRA), 7 U.S.C. §§ 135-135K; the Federal Environmental Pesticide Control Act (FEPCA), 7 U.S.C. §§ 136-136y; the Toxic Substances Control Act (TOSCA), 15 U.S.C. § 2601, *et seq.* and the Consumer Product Safety Act (CPSA), 15 U.S.C. § 2051, *et seq.* Analyzing each of these statutes, the court rejected plaintiffs' argument, finding that TOSCA and CPSA expressly exclude pesticides and that no private cause of action can be implied from FIFRA as amended by FEPCA. *See* 506 F.Supp. 737, 741-42 (E.D.N.Y. 1979)

Plaintiffs also contend that federal question jurisdiction existed because defendants had violated the common law of the United States. This court sustained their contention. 506 F.Supp. 737, 749 (E.D.N.Y. 1979). The Court of Appeals reversed over a strong dissent, concluding, for the purpose of denying federal question jurisdiction, that "there is [no] identifiable federal policy at stake in this litigation that warrants the creation of federal common law rules." 635 F.2d 987, 993 (2d Cir. 1980), *cert. denied*, 454 U.S. 1128, 102 S.Ct. 980, 71 L.Ed.2d 116 (1981). The Court of Appeals held that if the action was to continue in the federal courts, jurisdiction would have to be based on diversity of citizenship pursuant to 28 U.S.C. § 1332, *Id.*

In a subsequent decision on appealability of the class certification order, the Court of Appeals pointed out that it had not decided whether the government contract defense was controlled by federal law. *In re Diamond Shamrock Chemicals Co.*, 725 F.2d 858, 861 n. 2 (2d Cir. 1984). This reservation has implications discussed below in connection with the substantive law applicable to the case and the general rule of conflicts as well as statutes of limitations. The majority decision by the Court of Appeals at 635 F.2d 987 injected great legal complexity and doubt into the litigation making further appeals after trial a near certainty and increasing the desirability of settlement.

In their first amended complaint plaintiffs had asserted diversity of citizenship jurisdiction. The court struck the allegation of diversity because the first complaint failed to include the domiciles of plaintiffs and the corporate residences of the defendants. *See* 475 F.Supp. 928, 936 (E.D.N.Y. 1979). Plaintiffs reasserted diversity as a jurisdictional basis when they filed their fourth amended complaint in 1983. Since the case was certified as a class action complete diversity was required only as between the

named plaintiffs and the defendants. *See Snyder v. Harris,* 394 U.S. 3323, 340, 89 S.Ct. 1053, 1059, 22 L.Ed.2d 319 (1969); *Supreme Tribe of Ben-Hur v. Cauble,* 255 U.S. 356, 41 S.Ct. 338, 65 L.Ed. 673 (1921). Plaintiffs also alleged that the amount in controversy with respect to each of the individual claims of the representative plaintiffs exceeded $10,000, thus satisfying the requirements of 28 U.S.C. § 1332. *See Zahn v. International Paper Co.,* 414 U.S. 291, 94 S.Ct. 505, 38 L.Ed.2d 511 (1973).

Subsequent amended complaints designed to avoid various procedural difficulties were filed. The complaint now before the court is styled the Eighth Amended Complaint.

B. Conflict of Laws

Certification of a class in a diversity jurisdiction case such as this does not necessarily provide uniformity in substantive law because the substantive and conflict of laws rules of many states may apply. Accordingly, this court examined the choice of law rules of New York as well as the choice of law rules of the various states in which the transferor courts sit. *See Klaxon Co. v. Stentor Elec. Mfg. Co.,* 313 U.S. 487, 61 S.Ct. 1020, 85 L.Ed. 1477 (1941); *Van Dusen v. Barrack,* 376 U.S. 612, 84 S.Ct. 805, 11 L.Ed.2d 945 (1964). The difficulty in finding any one state's law controlling was readily apparent. Any state's contacts with this case are dwarfed by the national contacts.

> "[T]he United States Government (as distinct from any state of the United States) carried on [the Vietnam] war . . . for national foreign policy and military purposes." The exposure of veterans to Agent Orange manufactured by the defendants "was incident to carrying out those

> foreign and military policies. If the . . . injury suffered by" the veterans "was caused by the negligence of the" defense contractors who manufactured Agent Orange "expressly for the United States and to its specifications, this is a matter of far greater concern to the United States than to any other State of the United States."

580 F.Supp. 690, 712 (E.D.N.Y. 1984) (quoting *In re Air Crash Disaster Near Saigon, South Vietnam on April 4. 1974,* 476 F.Supp. 521, 529 (D.D.C. 1979))

The conflict of laws opinion analyzed the five most widely used choice of law methodologies and concluded that under any approach utilized today the result, so far as could be predicted, would be the same. Given the strong state-federal interest in equal treatment of Vietnam veterans, the lack of a federal statute or of any uniform state statute on the issues, as well as the Second Circuit's opinion denying that federal common law controls here of its own force, the states would look to federal or national consensus substantive law as the only workable approach to resolving the issues in this unusual case. The reasoning is developed at length in the opinion at 580 F.Supp. 690 (E.D.N.Y. 1984). It is obvious that since no appellate court has passed on this theory, the probability of appeal and possible reversal or modification is substantial, making settlement more appropriate.

C. Class Action

In 1980, this court decided that the litigation would proceed as a class action pursuant to Rule 23(b)(3) of the Federal Rules of Civil Procedure. 506 F.Supp. 762, 787 (E.D.N.Y. 1980). The basis for the decision was stated at length in the two opinions on the point, describing why a

class action was the best vehicle to achieve a fair result. *Id.* 100 F.R.D. 718 (E.D.N.Y. 1983). As the court noted:

> A single class-wide determination on the issue of causation will focus the attention of Congress, the Executive branch and the Veterans Administration on their responsibility, if any, in this case. By contrast, possibly conflicting determinations made over many years by different injuries make it less likely that appropriate authorities and the parties will arrive at a fair allocation of the financial burden, if any.

100 F.R.D. at 721. It was also pointed out that class certification would make settlemnt more likely. *Id.* at 723.

In addition to its earlier conclusions, this court found that issues of general causation as well as certain defenses were common to the class, that such questions predominated over questions affecting individual members and that "given the enormous potential size of plaintiffs' case and the judicial economies that would result from a class trial, a class was superior 'for the fair and efficient adjudication of the controversy.'" 100 F.R.D. at 724.

At the same time a separate class was certified on the issue of punitive damages under Rule 23(b)(1)((B), with no power to opt out. Questions as to the effect of certification under Rule 23(b)(1)(B) on plaintiffs' rights to opt out under Rule 23(b)(3) were reserved. It was decided to permit plaintiff to exercise their right to opt out pursuant to Rule 23(b)(3) but not to opt out pursuant to Rule 23(b)(1)(B). 100 F.R.D. at 728.

The class is defined as "those persons who were in the United States, New Zealand or Australian Armed Forces at any time from 1961 to 1972 who were injured while in or near Vietnam by exposure to Agent Orange or other

phenoxy herbicides, including those composed in whole or in part of 2, 4, 5-trichlorophenoxyacetic acid or containing some amount of 2,3,7, 8-tetrachlorodibenzo-p-dioxin. The class also includes spouses, parents, and children of the veterans born before January 1, 1984 directly or derivatively injured as a result of the exposure." 100 F.R.D. at 729.

Although the class certification order was entered on January 16, 1984, notice to the class was not sent until March 9, 1984 because of a stay issued by the Court of Appeals pending decision on defendants' petition for mandamus. The Second Circuit ultimately denied mandamus and vacated its stay. 725 F.2d 858 (2d Cir. 1984).

Pursuant to this court's certification order personal notice was mailed to several hundred thousand persons. The largest group represented names on file at the Veterans Administration Agent Orange Registry which the Veterans Administration made available to plaintiffs' counsel.

A copy of the class order and notice was also sent to the governors of each of the states asking that the notice be referred to the proper state organization dealing with Vietnam veterans. Cooperation was excellent. Many states gave wide circulation to the notice and other provided a list of names and addresses so the notice could be mailed to those veterans by plaintiffs' counsel.

A court-approved announcement on nationwide television networks and on radio stations with a combined coverage of at least 50% of the listener audience in each of the top 100 radio markets was circulated. The text of that notice can be found in 100 F.R.D. at 734.

The class notice was also published in three national general circulation newspapers and magazines and six veterans' magazines. Notice was directed to be sent to the 10 largest circulation newspapers in Australia and the five largest circulation newspapers in New Zealand. The text of the newspaper and magazine notice can be found in 100 F.R.D. at 734-35. Informal notice through the news media was widespread.

Finally, plaintiffs were authorized to arrange a toll-free "800" telephone number. Callers were to be told where to write to obtain more information concerning the litigation. The names and addresses of those calling were to be taken and those requesting a copy of the notice mailed to class members were to be sent one. A large number of people called the "800" number. Their names are in the files of the court.

The notice to class members included a Request for Exclusion Form to be completed by any one wishing to be excluded from the class. Exclusion forms were to be received by the Clerk of the Court on or before May 1,1984. As of May 6, 1984, 2440 requests for exclusion had been received. This number should be compared to the 2,400,000 persons who, it is estimated, served in the American, Australian and New Zealand Vietnam forces. The number of persons from that group believed to have had some chance of exposure to Agent Orange has been variously estimated as between 600,000 and 2,400,000.

As of the middle of July 1984 some 600 persons who had previously opted out asked to be reinstated as members of the class. More such communications are expected as a result of the public hearings even though they were to be filed by July 15. The court will consider such late applications to rejoin the class sympathetically.

Following the settlement, but prior to the Fairness Hearings, counsel for a number of those who had not opted out moved to certify a subclass of those members of the class who object to terms of the settlement and to appoint counsel to represent the subclass. *Cf.* 534 F.Supp. 1046, 1052-53 (E.D.N.Y. 1982). The court denied the motion orally on July 25, 1984. Attorneys and objecting members of the class were free to write to the court and to appear at the Fairness Hearings to explain their views. *See* II, A, Fairness Hearings, Legal Requirements, *infra.* No purpose would have been served by appointing counsel for a subclass of disappointed claimants except to increase expenses to the class and delay proceedings. *Cf. Parker v. Anderson,* 667 F.2d 1204, 1208 (5th Cir.), *cert. denied,* 459 U.S. 828, 103 S.Ct. 63, 74 L.Ed.2d 65 (1982) (10 of 11 named plaintiffs who objected to settlement and insisted on satisfaction of their individual claims named as part of new subclass).

D. Status of the Third-Party Complaints

Defendants' third-party action against the United States for indemnity and contribution on the independent claims of veterans' wives and children is still pending. *See* 580 F.Supp. 1242 (E.D.N.Y. 1984). The Court of Appeals denied the government's petition for a writ of mandamus seeking review of this court's February 1984 decision not to strike defendants' third-party claims. 733 F.2d 10 (2d Cir. 1984). Subsequently the government filed several motions with the Court of Appeals for rehearings, permission to proceed with an intermediate appeal and for a stay of the trial of the third-party claims which was then scheduled to begin on May 7, 1984. On May 4, 1984, the Court of Appeals stayed the trial of the third-party claims until May 8. On May 8 that court extended its stay. On May 23 the

government moved in this court for a stay of all proceedings pending disposition of its appeal to the Court of Appeals. That motion was denied. On June 22 the Court of Appeals indefinitely stayed the trial of the third-party claims and this court then stayed further discovery pending a decision by the Court of Appeals on appealability. The appeal was dismissed for lack of jurisdiction in the Court of Appeals on September 21, 1984. See *In re "Agent Orange" Product Liability Litigation,* 745 F.2d 161 (2d Cir. 1984)

The defendants have conducted an enormous amount of discovery of the government in preparing the government contract defense. Since an early stay on discovery was lifted in 1980, 506 F.Supp. 762, 797 (E.D.N.Y. 1980), the United States has attended these depositions and, in many cases, represented the deponents. *See* 99 F.R.D. 338 (E.D.N.Y. 1983) (approving Special Master's recommendation to permit government counsel appearing as counsel for former employees to review personal files of former employees for relevance as well as privilege claims).

A principal focus of discovery was on an element of the government contract defense — the extent of the government's knowledge of alleged hazards relating to the use of Agent Orange. More than 200 depositions were taken of former or current government employees, including military personnel, ranging from generals to privates. Rooms filled with military documents and other governmental records pertaining to the Vietnam War were made available for inspection by the parties, and hundreds of thousands of pages of government documents, many of which were formerly considered claissified, were produced for the parties. Pursuant to pretrial discovery orders, and on consent of the government, all depositions of former or current government employees and the vast bulk of

documents produced by the government are not subject to any protective order and are open to public scrutiny.

Many other depositions were taken of selected plaintiffs and of scores of expert witnesses from each side. In addition, a large file of defendants' records was amassed.

Originally no separate trial of the third-party claims against the government was envisioned. These claims were to be heard by the same jury deciding the claims of plaintiffs against defendants. Since no jury is permitted in Federal Tort Claims Act cases against the government, the jury would be sitting in an advisory capacity to the judge. Any discovery which the government had not completed as of May 7, 1984 was to have been conducted during the trial of the main action pursuant to a schedule worked out by the Magistrate and the parties.

After settlement of the controversy between plaintiffs and defendants, the parties were informed that trial of the defendants' indemnification claims against the government would be scheduled for September 1984. At a pretrial conference on May 29, 1984, on the assumption that the Court of Appeals' stay of trial would be lifted promptly, the Magistrate, at the court's direction, set a new schedule for discovery in the third-party action. Since, however, the government's appeal was not decided until September 21, 1984 it was not possible to complete discovery or to try the third-party claims in September 1984 as scheduled.

On May 4, 1984, defendant Diamond Shamrock moved in this court for reconsideration of so much of the February 16 decision as dismissed third-party claims against the government. Diamond Shamrock's motion was premises upon claims arising under the Tucker Act for breach of contract. Oral argument on that motion was

scheduled to be heard after the Court of Appeals decided the government's appeal on third-party claims.

There was substantial doubt about whether the Court of Appeals has jurisdiction to hear an appeal from a district court's order denying dismissal of a complaint. *See In re "Agent Orange",* 733 F.2d 10, 14 (2d Cir. 1984). Accordingly, by letter dated May 24, 1984, the government inquired anew whether the district court would certify its ruling refusing to dismiss third-party claims against the government under 28 U.S.C. § 1292(b) to permit an immediate interlocutory appeal. The application was denied on May 25. The court pointed out that a prompt trial or other disposition was in the public interest and was consistent with efficient judicial management of these protracted proceedings.

II. FAIRNESS HEARINGS

A. Legal Requirements

Rule 23(e) of The Federal Rules of Civil procedure provides that a class action may not be settled without approval of the court and notice to members of the class. The procedure (1) assures that any person whose rights would be affected by settlement has the opportunity to support or oppose it, *Pearson v. Ecological Science Corp.*, 522 F.2d 171, 176-177 (5th Cir. 1975), *cert. denied,* 425 U.S. 912, 96 S.Ct. 1508, 47 L.Ed.2d 762 (1976); (2) prevents private arrangements that may constitute "sweetheart deals" contrary to the best interest of the class, Dam, Class Actions: Efficiency, Compensation, Deterrence and Conflict of Interest, 4 J. of Legal Stud. 47, 57 n. 19, 58 (1985); (3) protects the rights of those whose interest may not have been given due regard by the negotiating parties, *Armstrong v. Board of School Directors,* 616 F.2d 305,

313 (7th Cir. 1980); *Alliance to End Repression v. City of Chicago,* 561 F.Supp. 537, 548 (N.D.Ill. 1982); and finally, (4) assures each member of the class that his or her integrity and right to express views and be heard on matters of vital personal interest has not been violated by others who have arrogated to themselves the power to speak and bind without consultation and consent.

The court's role in reviewing the proposed settlement is "as a fiduciary . . . serv[ing] as a guardian the rights of absent class members." *Grunin v. International House of Pancakes,* 513 F.2d 114, 123 (8th Cir.), *cert. denied,* 423 U.S. 864, 96 S.Ct. 124, 46 L.Ed.2d 93 (1975). "Voluntary out of court settlement of disputes is highly favored in the law.'" *Wellman v. Dickinson,* 497 F.Supp. 824, 830 (S.D.N.Y. 1980), *aff'd* 647 F.2d 163 (2d Cir. 1981). The court will not, therefore, substitute its own judgment for the good faith negotiations of experienced counsel.

Because the settlement, if approved, will have res judicata effects on all class members, due process requires that notice of the proposed settlement be given to members of the class. *Grunin v. International House of Pancakes,* 513 F.2d 114, 120 (8th Cir.), *cert. denied,* 423 (U.S. 864, 96 S.Ct. 124, 46 L.Ed.2d 93 (1975). *See also Mullane v. Central Hanover Bank & Trust Co.,* 339 U.S. 306, 70 S.Ct. 652, 94 L.Ed. 865 (1950). *But see* Manual for Complex Litigation § 1.45 at 51-52 (5th ed. 1981) (suggesting that failure to send notice of proposed settlement may not necessarily prejudice the rights of absent class members in view of Rule 23's requirement that the court approve any settlement). *Cf. Trist v. First Federal Savings & Loan,* 89 F.R.D. 1 (E.D. Pa. 1980) (in an antitrust class action, the court approved settlement for damages and other relief

and refused to exclude from the class persons to whom notice of the proposed settlement was not sent).

While an objector cannot opt out of a settlement he or she feels is unfavorable, notice provides an opportunity to class members to make their objections known to the court and enables both objectors and supporters to bring to the court's attention relevant facts concerning the settlement. *See Mendoza v. United States,* 623 F.2d 1338, 1348 (9th Cir. 1980). The number and nature of objections may reflect, to some extent, the adequacy of class representation, which is a factor in determining whether the settlement is fair. *See Malchman v. Davis,* 706 F.2d 426, 433 (2d Cir. 1983); *In re Federal Skywalk Cases,* 97 F.R.D. 380 (W.D.Mo. 1983). In this case there were many objections to the settlement and to the failure of class counsel to consult adequately with members of the class, *see* II, B, Reaction of Class Members, *infra,* but a substantial number were based on a lack of a full appreciation of the case's legal and factual problems and the mechanics of mass tort litigation.

The manner of giving notice of the proposed settlement is left to the discretion of the trial court by Rule 23(e). The notice must describe the settlement sufficiently to offer an opportunity to class members to present their objections. *Weinberger v. Kendrick,* 698 F.2d 61, 70 (2d Cir. 1982), *cert. denied,* ____ *U.S.* ____, *104 S.Ct. 77, 78 L.Ed.2d 89 (1983); Mullane v. Central Hanover Bank & Trust Co.,* 339 U.S. 306, 314, 70 S.Ct. 652, 657, 94 L.Ed. 865 (1950). Notice must be "scrupulously neutral," expressing no opinion on the merits or amount of the settlement. *Grunin v. International House of Pancakes,* 513 F.2d 114, 122 (8th Cir.), *cert. denied,* 423 U.S. 864, 96 S.Ct. 124, 46 L.Ed. 2d 93 (1975), quoting *Philadelphia Housing Authority v. American Radiator & Standard*

Sanitary Corp., 323 F.Supp. 364, 378 (E.D.Pa. 1970). Due process does not require that a copy of the settlement agreement itself be attached to the notice. *Grunin v. International House of Pancakes,* 513 F.2d at 122. A general description of the settlement terms is sufficient. *Weinberger v. Kendrick,* 698 F.2d at 70. The "options open to dissenting class members" in connection with the proceedings regarding the fairness determination must be apparent. *Air Lines Stewards and Stewardesses Ass'n v. American Airlines, Inc.*, 455 F.2d 101, 108 (7th Cir. 1972). In this case both the settlement agreement and a description were included to enhance communication with the class.

Finally, the notice should be given a reasonable time before the court determines whether or not to approve the settlement in order to permit members of the class to investigate and reflect on the matter before taking a position. What is a reasonable time varies from case to case. In *Grunin v. International House of Pancakes,* 513 F.2d 114 (8th Cir.), *cert. denied,* 423 U.S. 864, 96 S.Ct. 124, 46 L.Ed.2d 93 (1975), notice of the proposed settlement was given only 19 days before the court held a hearing on fairness. In *Greenfield v. Villager Industries, Inc.*, 483 F.2d 824 (3rd Cir. 1973), the court allowed one month between notice and hearing. Here some three months' notice of the settlement hearings was given to the class. Moreover, additional communications to the court are still possible since a final decision has not yet been reached.

The Manual for Complex Litigation recommends that before sending notice a court decide whether the settlement is within the range of possible approval and suggests that the court hold a preliminary hearing for this purpose. Manual for Complex Litigation § 1.46 (5th ed. 1981); *see In re General Motors Corp. Engine Interchange Litiga-*

tion, 594 F.2d 1106, 1133 (7th Cir. 1979), *cert. denied,* 444 U.S. 870, 100 S.Ct. 146, 62 L.Ed.2d 95 (1979). Such a preliminary hearing is designed to avoid wasting time and money when a proposed settlement does not approach fairness. *See* Manual for Complex Litigation § 1.46 (5th ed. 1981). This court implicitly found that the settlement was within the range of possible approval before notifying the class. A preliminary hearing was not required because the court had closely followed the settlement negotiations. Settlement was proposed only after intensive negotiations between counsel for all defendants and every member of the Plaintiffs' Management Committee. They were assisted by neutral settlement masters appointed by the court. Negotiations took place over a period of several days culminating in the proposed settlement on the morning the parties were scheduled to go to trial. Obviously both sides had developed substantial evidence by that time and were fully aware of the strengths and weaknesses of their cases.

In deciding whether to approve the settlement the court must have a sufficient grasp of the facts and the law involved in the case in order to make a sensible evaluation of the litigation's prospects. *See Malchman v. Davis,* 706 F.2d 426, 433 (2d Cir. 1983). An appreciation of the probabilities of plaintiffs' recovery after a trial and the possible range of damages is essential. The cases caution, however, that the court "should not . . . turn the settlement hearing "into a trial or rehearsal of the trial'." *Flinn v. FMC Corp.,* 528 F.2d 1169, 1172 (4th Cir. 1975), *cert. denied,* 424 U.S. 967, 96 S.Ct. 1462, 47 L.Ed.2d 734 (1976), quoting *Teachers Ins. & Annuity Ass'n of America v. Beame,* 67 F.R.D. 30, 33 (S.D.N.Y. 1975). *See also Malchman v. Davis,* 706 F.2d 426, 433 (2d Cir. 1983). Thus the trial court has a limited scope of review for deter-

mining fairness. The very purpose of settlement is to avoid trial of sharply disputed issues and the costs of protracted litigation. Haudek, The Settlement and Dismissal of Stockholders' Actions – Part II: The Settlement, 23 Sw.L.J. 765, 795 (1969); *Newman v. Stein,* 464 F.2d 689, 691-92 (2d Cir.), *cert. denied,* 409 U.S. 1039, 93 S.Ct. 521, 34 L.Ed.2d 488 (1972).

The court may limit its fairness proceeding to whatever is necessary to aid it in reaching a just and informed decision. *Flinn v. FMC Corp.,* 528 F.2d at 1173. An evidentiary hearing is not required. *Malchman v. Davis,* 706 F.2d at 434; *Patterson v. Stovall,* 528 F.2d 108, 112 (7th Cir. 1976). Typically, however, courts hold a hearing so that objectors to the settlement may make their views known. *See, e.g., City of Detroit v. Grinnell Corp.,* 495 F.2d 448, 462-64 (2d Cir. 1974).

It has been argued that approval of a settlement should in theory turn on whether the group consents, instead of on how close or far the proposed settlement is from an "imagined" judgment. *See* Fiss, Against Settlement, 93 Yale L.J. 1073, 1082 (1984), *reprinted in* G. Friedman, J. Himmelstein, H. Lesnick, C. Menkel-Meadow & L. Riskin, Beyond the Adversary Model Materials on Mediation and Alternative Approaches to Law Practice 196 (1984). But an approach requiring consent cannot be followed in most cases, including the instant one, for practical reasons. A democratic vote by informed members of the class would be virtually impossible in any large class suit. The costs of ensuring that each member of the class in this case fully understood the issues bearing on settlement and then voted on it would be prohibitive and the enterprise quixotic. Even though hundreds of members of the class were heard from, there was an overwhelmingly large silent majority. In the final analysis there was and can be

no "consent" in any meaningful sense. This is an inherent conceptual problem of the class action, but in considering the matter it must be remembered that without the class action controlled by attorneys for the class there could be no recovery in many instances where a viable lawsuit is clearly in the public interest.

In the usual settlement in a non-class proceeding the parties on both sides voluntarily enter into a compromise of their differences. A party may or may not feel a certain reluctance in giving up its claims or agreeing to pay some amount of money, but each party has determined for itself that settlement is preferable to going forward with the suit. That condition cannot be replicated in a class situation. Class actions are premised on the impracticability of joining all parties in the suit. Individual members are represented in settlement as in all other phases of the litigation by counsel to the representative parties. *See, e.g., In re "Agent Orange" Product Liability Litigation,* 100 F.R.D. 718, 721 (E.D.N.Y. 1983), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____ *U.S.* ____, *104* S.Ct. 1417, 79 L.Ed.2d 743 (1984). Few members of the class know "their" counsel or have confidence in them. Those class members must, in the ultimate analysis, depend upon the court's impartiality and judgment.

It is apparent, therefore, that while some members of the class object strongly to any settlement to which they did not consent on the ground that they are being deprived of a due process right to an adjudication of individual claims by a jury, this objection cannot prevent a final settlement. The court is sympathetic to these views but individual rights must yield in this instance or the substantial benefits of class actions to other members of the class and to the public will be lost.

Rule 23 does not set out any standard for approval of class action settlements. The cases state in general terms that the settlement should be fair, reasonable and adequate *West Virginia v. Chas. Pfizer & Co.*, 440 F.2d 1079, 1085 (2d Cir.), *cert. denied,* 404 U.S. 871, 92 S.Ct. 81, 30 L.Ed.2d 115 (1971), *aff'g* 314 F.Supp. 710 (S.D.N.Y. 1970); *Walsh v. Great Atlantic & Pacific Tea Co., Inc.*, 726 F.2d 956, 965 (3d Cir. 1983). Fairness, reasonableness and adequacy must be judged in light of the "totality of the circumstances." *Grunin v. International House of Pancakes,* 513 F.2d at 124.

Several factors have emerged to guide the courts in determining whether a settlement is fair, reasonable and adequate. *See, e.g.,* McGough & Lerach, Termination of Class Actions: The Judicial Role, 3 U.Pitt.L.Rev. 445 (1972). In *City of Detroit v. Grinnel Corp.*, 495 F.2d 448 (2d Cir. 1974), the Second Circuit set out the following often-cited factors that a trial court should consider: "(1) The complexity, expense and likely duration of the litigation," *id.* at 463 – here complexity and expense are enormous and the litigation would extend over years. "(2) [T]he reaction of the class of the settlement," *id.* – this class was divided; of those who addressed the court, a majority opposed the settlement. "(3) [T]he stage of the proceedings and the amount of discovery completed," *id.* – the case was about to be tried and almost all discovery was completed. "(4) [T]he risks of establishing liability," *id.* – liability is almost impossible to establish. "(5) [T]he risks of establishing damages," *id.* – damages could easily be shown. "(6) [T]he risks of maintaining the class action through the trial," *id.* – this could be accomplished although it would be difficult in view of the great expense to the class attorneys. "(7) [T]he ability of the defendants to withstand a greater judgment," *id.* – there is no doubt

about the defendants' great resources. "(8) [T]he range or reasonableness of the settlement fund in light of the best possible recovery," *id.* — the maximum recovery was great but no recovery was more likely. Finally, "(9) the range of reasonableness of the settlement fund to a possible recovery in light of all the attendant risks of litigation," *id.* — the settlement is well within the range of reasonableness in view of all the relevant factors.

The most important consideration is the strength of plaintiffs' case on the merits weighed against the amount offered in settlement. 7A C. Wright & A. Miller, Federal Practice and Procedure § 1797 (1972); *City of Detroit v. Grinnel Corp.*, 495 F.2d 448, 455 (2d Cir. 1974); *West Virginia v. Chas. Pfizer & Co.*, 440 F.2d 1079, 1085 (2d Cir.), *cert. denied,* 404 U.S. 871, 92 S.Ct. 81, 30 L.Ed.2d 115 (1971). The weaknesses of plaintiffs' case, the availability of defenses to the suit, and the risks of establishing liability and damages at trial must be factored into this balance. *See City of Detroit v. Grinnel Corp.*, 495 F.2d at 457; *Alliance to End Repression v. City of Chicago,* 561 F.Supp. 537, 548-49 (N.D.Ill. 1982). The costs of continued litigation, *see City of Detroit v. Grinnell Corp.*, 495 F.2d at 457, and the effect of an adverse judgment after rejection of the settlement are also relevant. *See Wellman v. Dickinson,* 497 F.Supp. 824, 830 (S.D.N.Y. 1980); *In re Scientific Control Corp.*, 80 F.R.D. 237, 242 (S.D.N.Y. 1978).

The dollar amount of the settlement by itself is not decisive in the fairness determination. The fact that the settlement amount may equal but a fraction of potential recovery does not render the settlement inadequate. Dollar amounts are judged not in comparison with the possible recovery in the best of all possible worlds, but rather in light of the strengths and weaknesses of plain-

tiffs' case. *See, e.g., Flinn v. FMC Corp.,* 528 F.2d 1169, 1172-73 (4th Cir. 1975); *City of Detroit v. Grinnell Corp.,* 495 F.2d 448, 455 (2d Cir. 1974). As the *Grinnell* court noted, "there is no reason, at least in theory, why a satisfactory settlement could not amount to a hundredth or even a thousandth part of a single percent of the potential recovery." *Id.* at 455 n. 2. As the Fairness Hearings demonstrated, the settlement amount would not begin to cover the total costs of medical treatment for the class which easily could amount to billions of dollars. Ultimately the government will have to make the political and social decision to pay these costs for veterans and their families, as it has already begun to do. This is not unfair since the United States of America ordered the production and use of the Agent Orange.

A second major set of factors for the court's consideration focuses on the process of negotiations which culminate in the proposed settlement. These include the absence of collusion in reaching the settlement and whether the interest of all class members were adequately considered. *Parker v. Anderson,* 667 F.2d 1204 (5th Cir.), *cert. denied,* 459 U.S. 828, 103 S.Ct. 63, 74 L.Ed.2d 65 (1982); *Malchman v. Davis, 706 F.2d 426, 433 (2d Cir. 1983); In re General Motors Corp. Engine Interchange Litigation,* 594 F.2d 1106 (7th Cir. 1979); *In re Federal Skywalk Cases,* 97 F.R.D. 380, 386 (W.D.Mo. 1983). *Cf. Ace Heating & Plumbing Co. v. Crane Co.,* 453 F.2d 30, 33 (3d Cir. 1971) (negotiating process does not require as strict scrutiny when settlement for class has been negotiated by court-approved class counsel as when it has been negotiated by counsel not so approved). Here negotiations and settlement discussions were observed by Special Masters accountable to the court insuring against any selling out of the class for the benefit of insiders.

A third set of factors utilized in the fairness determination concerns the reaction to the settlement, including the amount of opposition to and support for the settlement, and the opinions of the class members and their counsel. *City of Detroit v. Grinnell Corp.,* 495 F.2d at 463. At least one court has cited the impact of the settlement on the community as a factor to be considered. *See In re Federal Skywalk Cases,* 97 F.R.D. 380 (W.D.Mo. 1983). The court has given these factors extended consideration. A large portion of the Fairness Hearings was devoted to the impact of the settlement on members of the class and the community. After giving these masters full weight, the court finds they support settlement. The strong opposition of a considerable number of sincere and well-motivated members of the class cannot, under these circumstances, be decisive.

Notice of the proposed settlement was mailed to all class members to whom notice of the pendency of the class action was sent, as well as to all persons whose names and addresses were provided to the Management Committee through the "800" telephone number. *See* Appendix B. Notice was also published in many newspapers and magazines. The notice generally described the litigation and the terms of the settlement and included a copy of the settlement agreement itself. *See* Appendix B. It invited written communications and announced that this court would be holding hearings in five cities across the country to consider the fairness of the settlement and indicated the dates on which these hearings would be held. The notice also announced the date on which this court would hold a hearing to consider attorneys' fee applications. In addition the mailed notice contained a claim form to be filled out by any class member (or representative) who believes he or

she suffers or suffered from adverse health effects related to exposure to Agent Orange. The published notice advised class members where to write for this claim form. Over 400,000 copies of this notice have been distributed, although some class members have received more than one notice since the names were taken from overlapping lists supplied by various sources.

The Fairness hearings revealed that the settlement was widely discussed by veterans groups and public commissions as well as other state officials. There were widespread reports on, and discussions of, the settlement in newspapers, and on radio and television. Undoubtedly there were some who were not aware of the case or its proposed termination, but this group is probably small. Notice must be deemed adequate.

The notice of proposed settlement did not contain the final plan for distribution of the settlement fund. Rather, it outlined the basic elements of the plan that the Plaintiffs' Management Committee has indicated it will propose to the court. As outlined the plan must allocate a portion of the settlement fund for payment of claims for manifested illnesses and another portion for future payments to class members who have not as yet suffered adverse health effects. The fund will also provide assistance to children of veterans exposed to Agent Orange including those not yet born who wish to join the class.

A complete distribution and administration plan will be presented. An appealable order will be entered shortly after fees are fixed to allow appeals challenging the settlement and fees orders. This delay is in partial accord with the views expressed by some at the Fairness Hearings that a final order is not appropriate until members of the class know the amount of attorneys' fees and the elements of the distribution plan have begun to be considered.

Although a formal order of the court approving or disapproving the settlement will be held in abeyance, the cautionary step is not required. Approval of the settlement amount does not depend on approval of the distribution plan. *See In re Chicken Antitrust Litigation,* 560 F.Supp. 957, 959 (N.D.Ga. 1980) ("the approval *vel non* of the interclass sharing proposal is a separate issue [from that of the fairness, reasonableness and adequacy of the settlement], one which the court will consider at a later date"), *aff'd,* 669 F.2d 228 (5th Cir. 1982). *See also West Virginia v. Chas. Pfizer & Co.,* 314 F.Supp. 710 (S.D.N.Y. 1970), *aff'd,* 440 F.2d 1079 (2d Cir.), *cert. denied,* 404 U.S. 871, 92 S.Ct. 81, 30 L.Ed.2d 115 (1971); 3 Newberg, Newberg on Class Actions § 5640 at 551 (1977).

Conditional approval of the settlement now will permit work to begin on the development of a distribution plan unaccompanied by the doubts and uncertainties that would exist if the settlement between the plaintiffs and defendant chemical companies were not tentatively ratified by this court. The formulation of a distribution plan in a case as complex as this is extraordinarily complicated. Consultations with a variety of medical, scientific, economic, actuarial, insurance and other experts are currently proceeding so that a fair and comprehensive distribution scheme may be developed. Some options concerning such a distribution plan have been suggested at the Fairness Hearings. *See* VII, Plan for Distribution of Fund. *infra.* Representatives of the class, including veterans, will play a major role in providing advice and guidance concerning the best methods of achieving the maximum benefits for eligible class members and afterborn children.

At the Fairness Hearings considerable time was devoted to preliminary discussions of the possible distribution

plans. Those discussions and research by the court demonstrate that an effective distribution plan is possible. From a practical standpoint no sound purpose would be served by delaying initial approval of the settlement. Significant expenditures of time, money and talent necessary to develop a comprehensive and fair distribution scheme would be called into question if the plan were to be a part of a proposed settlement which did not at least have the conditional approval of this court.

B. Reaction of Class Members

More than a thousand class members have expressed their views on the settlement both orally, in hearings held by the court and in writing, through letters, cards and telegrams. A few quotations from the hearings and other communications are set out in this section.

The quotations do not begin to reflect the moving sights and sounds of the hearings — broken-hearted young widows who have seen their strapping young husbands die of cancer, wives who must live with husbands wracked with pain and in deep depression, mother whose children suffer from multiple birth defects and require almost saint-like daily care, the strong men who have tears welling up in their eyes as they tell of fear that their families will be left without support because of their imminent death, the man whose mind is so clouded he must be prompted by his wife standing by with his defective child in her arms to go on with his speech, the veterans trying to control the rage that wells up within them, the crippled and diseased with running sores and green fungus growths, and the women who volunteered for field or Red Cross duty and now feel themselves rejected and sick with what they believe are Agent Orange related diseases.

Just a few years ago these veterans were healthy and handsome youths in their teens and early twenties who bravely went to war because their leaders asked them to. And it is clear from what they said and did in court that they are sincere when many of them say they would volunteer their broken bodies and worn spirits once again if their country called. Some are understandably bitter that their government and its people have shunned them instead of embracing them as heroes. Only the cold written transcript is permitted as a record of these remnants of the war pleading for justice for themselves and for their families. They remind us, as we enjoy the fruits of our power and wealth, to remember those men and women who struggle each day with disastrous medical problems they attribute to service in Vietnam.

1. Hearings

The court held Fairness Hearings in Brooklyn, New York (August 8-10, 1984), Chicago, Illinois (August 13-14), Houston, Texas (August 16-17), Atlanta, Georgia (August 20-21) and San Francisco, California (August 23-24). Most of those who spoke were American veterans, their wives and parents. A number of Red Cross volunteers and other civilians who worked in Vietnam and were exposed to Agent Orange testified in support of the veterans although they themselves are not members of the class and do not receive veterans' benefits.

Representatives from Australia and New Zealand appeared at a three hour session in San Francisco on the evening of August 24. In July the court received a memorandum that discussed some of the special problems, notably with the claim forms, faced by the Australian and New Zealand veterans. The forms were modified to take account of their special needs.

The court also heard testimony from representatives of a variety of veterans' organizations, some born of the Agent Orange controversy itself, such as the Agent Orange Children's Fund and Agent Orange Victims International, as well as less specialized veterans' organizations such as local and national chapters of Vietnam Veterans of America (VVA), the Veterans of Foreign Wars (VFW), Vietnam Veterans Against the War, and Black Veterans for Social Justice. Also represented were some state Agent Orange commissions and state veterans organizations as well as a wide variety of local self-help groups that do impressive work to aid Vietnam veterans.

Despite the many unique and individual stories, certain concerns were voiced repeatedly. Some of these themes are set forth below followed by a few representative quotations from the testimony at the hearings.

a. Need for Medical Help for Veterans and Financial Help for Those Too Ill to Work

Many class members who spoke at the hearings emphasized their need to receive medical treatment for themselves and their families. A monetary award as compensation for their illnesses did not appear to be as important to them as ensuring that some sort of diagnostic and treatment program be instituted to deal with the problems they believe are a result of exposure to Agent Orange in Vietnam.

Veterans recognize the difficulties inherent in allocating one sum out of which people suffering from a variety of problems could be compensated and they advocate treatment and health care. As one veteran from New York put it:

> The answer is to provide a means whereby adequate medical care is made available to Vietnam

> veterans . . . The money in this settlement could be used as a part of a fund that would be set up for this reason.

Many who stressed the immediate need for medical and financial help supported the settlement because they believe that it offers some measure of relief to the veteran now, not as one of them put it, "in some misty future that . . . may never come." A veteran from South Dakota who has been active in lobbying for legislation on behalf of Vietnam veterans stated:

> Many people have suffered and need some form of support immediately. If the settlement is not accepted and we are forced to reenter the judicial course it could possibly take five to ten years longer at a minimum.

d. Dissatisfaction with the Veterans Administration and the Treatment Received in its Hospitals

The majority of those who spoke expressed extreme dissatisfaction with the Veterans Administration. The court makes no findings on this issue. The Department of Justice, unlike counsel for plaintiffs and defendants, chose not to attend any of the Fairness Hearings or to present evidence contradicting complaints of VA inadequacy. Nevertheless, it seems highly unlikely that service to veterans is as uniformly bad as was suggested at the Fairness Hearings. For example, by letter dated August 30, 1984 to Special Master Kenneth Feinberg, the Department of Justice indicates that biennial "patient satisfaction questionnaires" and various evaluation and certification procedure ensure adequate quality of care.

A veteran from Montana expressed a common complaint: "The VA . . . is not the place to go." Another veteran put it more bluntly: "The treatment in the VA hospital is atrocious.".

Many feel that the VA is not sensitive to the needs of Vietnam veterans. A veteran who served in the Army from 1962 to 1969 testified:

> The treatment in VA hospitals is horrendous to the Vietnam veteran. For the most part they don't care and turn a deaf ear to our problems and conditions.

A Vietnam veteran with twenty-four years of service used a quotation repeated over and over again at the hearings:

> In the words of John Fitzgerald Kennedy, "Ask not what your country can do for you, but what you can do for your country." Now the question becomes, what is the country doing for the Vietnam veterans? The Federal Government has closed its eyes to the cry of the Vietnam veteran, not only for medical compensation, but it's closed the doors for medical care.

A veteran who, like many others, had a vasectomy after his wife had a number of miscarriages because he feared he had damaged genes (his wife had healthy full term children by him before he was exposed to Agent Orange), complained:

> I was subjected to ridicule and was laughed at about my health concerns by V.A. personnel . . . . I would hope that somebody, some institution, somebody in this country can direct that the V.A. start out-reaching, identifying and informing those who served this country. My God, our tax dollars went to support it and it's sitting on its collective duff, and I for one have had enough of the V.A.

Many veterans did not always know what benefits were available from the VA or who was entitled to them.

Several believed – mistakenly, the court is informed – that they were not entitled to any benefits unless they received an honorable discharge. One veteran who lost a leg in Vietnam combat, cited his personal experience:

> I went to the VA myself and asked [about help for Agent Orange]. And they told me I had to go to a private doctor. They have no help because since I received less than honorable discharge, the VA will not handle it and you have to have an honorable discharge.

Another speaker, a veteran from Illinois, testified that those in active service in the militarty will not seek treatment at military hospitals for illnesses they believe are related to exposure to Agent Orange because they fear their military careers will be jeopardized:

> Many of the individuals who have requested medical attention who are on active duty or with reserve contingent from active duty are now being told they may not continue top act or function in the same capacity as they have before . . . [These are people who claim] Agent Orange exposure, post-traumatic distress disorder . . . . They will ask him to leave [the military service].

e. Insufficiency of Settlement Amount to Pay Adequate Damages

A woman who served in the Army Nurse Corps in Vietnam likens the process of allocating the settlement amount among class members to triage – the procedure in battle zones of determining who among the casualties should receive medical attention first. She explained in Chicago:

> [W]ho would be given the first chance to live and who would go behind the screen and wait,

> perhaps til it was too late . . . I look upon the settlement as people playing a sort of triage with us. How will it be decided how much each of us is worth? Who will decide it? Is one of us worth more than another? Does a spina bifida baby receive the same amount as . . . the soft tissue sarcoma?
>
> We need research. We need evidence.
>
> We need facts. We don't need your insignificant amount of money.

The wife of a veteran with a child who had severe birth defects and who was a named plaintiff told the court, while her deformed daughter sat in a wheelchair beside her:

> Close to this trial date the Management Committee called to tell me that one of the best economists in the country would call me to ascertain the cost of Kerry living into projected old age.
>
> After four hours of conversation with me and in conjunction with discussion of the Management Committee, the economist submitted . . . a detailed analysis that it will take $6.6 million to care for Kerry.
>
> Michael and I were able to legitimately show we had laid out on Kerry, during these 13 years of her life, a dollar amount of $475,000.
>
> So now I realize we are in need of a miracle of the loaves and fishes if we only have $180 million . . . .
>
> Kerry, with 22 congenital birth defects, who forever lives in a wheelchair, who is denied the right to design her own destiny, who will never

> know the beauty of making love or marrying some great guy, who will never know the satisfaction of going to M.I.T. or Harvard, but must settle for a special education setting gets $14,000 and you talk about justice?

f. Failure of Chemical Companies to Admit Fault

Some opposed the settlement because it contains no admissions of guilt, no assignment of blame. As a former Marine stated:

> I don't think it's reasonable that there is no cause or liability assigned at all. I'd like to have this come out in court and have a cause established for the conditions that the veterans, myself included, are alleging and the liability assumed for whoever is at fault.

A woman, the wife of a veteran from Wisconsin, shares this feeling:

> For the defendant to deny liability for those physical injuries and the emotion[al] suffering that my family and thousands of others have gone through for years particularly in light of the scientific research is extremely insulting and morally contemptible . . . .
>
> When this litigation began in 1979 and to this day my family has had a primary goal in this historic litigation whereby the chemical companies and the United States government admit what they have done, accept their responsibility to the citizens of this country and never be allowed to repeat this scenario anywhere in the world. That basic goal has now been dropped by the legal wayside.

Another woman, whose husband returned from Vietnam in 1968 and died nine years later, testified:

> On May 7th no one stood accused, no one accepted responsibility for the deaths of these men, no one showed remorse for our losses and the burdens of our families, no one even said they were sorry.

A reginal coordinator of a veterans organization from Georgia put it this way:

> The toxic effects of Agent Orange were known and utilized by the military, the chemical companies, and now we are supposed to agree to a stipulation that nobody did anything wrong. Somebody did something wrong. Somebody violated international law and even more important somebody violated our health, our bodies, and the future of our children.
>
> Now they want to say and want us to endorse "We are not responsible." 30 years of knowledge regarding the ill effects of Agent Orange calls them liars. They are responsible. You know it, I know it, and the world knows it, and we will never acquiesce in a condition which states otherwise.

g. Failure of Government to Admit Fault, Participate in Settlement and Accept its Responsibility for Caring for Vietnam Veterans and Their Families.

Most of those who spoke felt that Vietnam veterans have been ignored by the government. Many did not understand why the government did not participate in the settlement. A majority of those who spoke believed that the government should take responsibility for the problems the veterans believe resulted from their exposure to Agent Orange. One women, whose husband served in

Vietnam and whose son has multiple birth defects, movingly expressed this belief.

> Everytime [my son] turns blue you can bet I think of our government and Agent Orange . . . .
>
> Our government knew since 1957 what their chemicals would do to the human body. Our government has sentenced our vets and their children to a slow death.

Some who support the settlement feel that it will prompt the government to take action on behalf of the Vietnam veterans. A veteran from Michigan summarizes this view:

> I also feel that this settlement in itself, if it is allowed, will force the Government into recognizing our problem. [I]t's the government who should take care of me and take care of my wife. I am a veteran. I went over there. I served my country. If I die then it is the Government's responsibility . . . . I truly believe that . . . this settlement, if allowed, will actually bring pressure to bear on the Government to say: Hey look, the chemical companies made a bad product, they admitted it. They are giving $180 million. Now it's our turn. We have cheated the veterans. We have denied them all their rights. And now it is our responsibility to take care of the veterans.

In this statement to the court, a lawyer for the plaintiffs urged the United States Government "to put its arms around these veterans and tell them for once that they care." A former male nurse who served in Vietnam and is now a member of the faculty of the School of Medicine, University of Southern California, declared: "The deadly legacy of Agent Orange will only conclude when the United States is held accountable."

Another veteran, who spent thirteen months in a hospital after combat in Vietnam, told us:

> I think that we should have some sort of resolution made from this courtroom where we can sue the United States government, let them be accountable. And let them say that they did wrong. They owe us something. I don't care whether it's a nickel or a dime, I want them to say, "I was wrong." I want justice from my country who I stood for, who I fought for, who I loved and who I gave everything I could in my life.

h . Possibility of a Coverup of Information with Sealed Files and Return of Documents to Defendants

The testimony of a Marine Corps veteran active in regional veterans' organizations illustrates the repeated concern about coverup:

> It is therefore, necessary that through the process of discovery all information be made public, a guarantee that all parties — not to exclude the governement — be held equally responsible and that all parties aid in the process of corrective rehabilitation to veterans, their children and all after-borns.
>
> To do less than that would somehow take on again the awful stench of another governmental cover-up.
>
> As we walked through the rice paddies and the jungle and the marshlands to locate, to close and engage the enemy, we were aware of the risk to our life and limb, but at no time did we feel that our own country would care so little about our welfare that they would spray down from the skies . . . poison.

> We were exposed to a lethal agent. That in itself is criminal. But the government and its contractors have gone to great lengths in an attempt to cover up their actions.
>
> Ever so slowly the cloak of deception is being removed and the truth is emerging. The total light of day must be placed on this deceit.

The California State Council of Vietnam Veterans of America requested that:

> The court unseal all discovery documents produced by the parties, allowing the public free access . . . The question . . . becomes whether these documents should be returned to the chemical companies or laced in the public domain?
>
> These discovery documents must be placed in the public domain because they contain important information . . . . [They] address such issues as the evidence that exists that Agent Orange covered certain illnesses, when and to what extent the chemical companies knew the harmful effects . . . and what the government independently knew about these adverse health effects.
>
> These issues are important to Vietnam veterans in making decisions regarding living children needing medical care, etc.

This concern, while understandable, is not an appropriate reason for rejecting the settlement. The court has the power to order documents released even though they were sealed as part of a settlement. *See In re Franklin National Bank Securities Litigation,* 92 F.R.D. 468 (E.D.N.Y. 1981). That power is particularly important in a multidistrict litigation since the purpose of the MDL

process is to assemble data through discovery that can be used in any related litigation without the need for duplicative efforts. *See In re Upjohn Co. Antibiotic Cleocin Products Liability Litigation,* 664 F.2d 114 (6th Cir. 1981) (transferee court vacated protective order of transferor court). Any party or interested persons may move for such relief. *See In re Franklin National Bank Securities Litigation,* 92 F.R.D. 468 (E.D.N.Y. 1981) (public interest group's motion to intervene to unseal documents). Until all litigation related to *"Agent Orange,"* MDL 381, is completed, no documents will be destroyed. The parties are expected to file all depositions and other papers obtained in discovery in a depository at the courthouse in accordance with directions to be provided by a Magistrate who will determine sealing and disposition subject to appeal to the court. *See In re "Agent Orange" Product Liability Litigation,* 98 F.R.D. 539, 545-548 (E.D.N.Y. 1983), 99 F.R.D. 645 (E.D.N.Y. 1983) (unsealing of documents previously sealed).

i. Need for a Full Open Trial to Vindicate the Plaintiffs and Protect Their Rights to Individual Justice.

Many veterans who opposed the settlement did so because they wanted their "day in court." An Army veteran who served in Vietnam from 1968 to 1970 expressed the view of those who wanted a trial to hold the defendants accountable:

> I have come here to plead with you not to accept this offer, to give us our day in court. I have heard some say this settlement is fair and I ask them, would any amount of money help correct the problems with our children? Would all the money in the world be worth having a child born without a hand, without a foot, severely brain-

> damaged, deformed grossly or dead? What price do you put on my suffering? We started this lawsuit to bring those responsible to trial and find them guilty. We can't stop now.

Others wanted their day in court to answer questions about Agent Orange. More than one speaker alluded to the trial as a tool to aid the public, the scientific community and the medical community in understanding the role of Agent Orange in veterans' problems. A veteran from Wisconsin opposed the settlement for this reason:

> [t]he feeling is that win or lose at the actual trial we would gain more information and knowledge through the discovery process of the trial . . . .
>
> We feel that the trial procedure would help to determine the facts that will be needed to pursue a claim with the Veterans Administration and the federal government.

For these people, a trial — win or lose — is preferable to a settlement in which the questions still remain. As one former Marine puts it:

> We wanted to have our day in court so that the evidence can be brought out and we could present our allegations and that the chemical companies can present their defenses against it concerning the scientific and medical data and we think this would be vastly useful to the scientific and medical community and would probably put them quite a few years ahead with all their studies that are going on. We really wanted to have that brought out in open public court, printed in the media, let the American public know and also the scientists and doctors.

j. Inability to Decide Whether to Accept Settlement Without Knowing How it Would Be Distributed or How Much Would be Spent in Attorneys' Fees

One veteran from California asked the following questions, reflecting the same position as many other veterans:

> Number one, how can the court request class members to decide if the settlement is fair and reasonable when the proposed settlement does not provide those affected with adequate information on which to make an intelligent decision?
>
> Number two, how can the court award damages when there is inaccurate information on how many veterans and their family members have been adversely affected by exposure to Agent Orange; or how many veterans have already died; or identify those exposed veterans who are at risk of developing long term health problems?
>
> Number three, how can the court award damages without addressing eligibility requirements?

Many others indicated that they could not decide if the settlement would be adequate without knowing how much would be spent in attorneys' fees. As a result of these views the order approving the settlement will be made conditional, subject to reconsideration after plans for disposition of funds have been considered preliminary and the amounts of attorneys' fees have been fixed.

k. Inadequate Payment by Defendants Relative to Their Resources

Repeatedly witnesses referred to the assets of the defendants as over ten billion dollars and their earnings as in the hundreds of millions of dollars a year. The amount of the settlement was, as some indicated, "petty cash" for the

defendants. Many pointed out that insurance companies would foot all or most of the cost. Some pointed to the fact that defendants' stock rose on the exchange after the settlement was announced. They thought it unfair not to have defendants pay more in view of their resources.

l. Inadequate Time to File Claims

There were many people who indicated that they and those they knew had just heard of the settlement and many of them needed more time to file claims. One witness asked the court:

> How will veterans in the State of Washington find out about the settlement?
>
> Second, veterans are concerned that they are unable to make an informed choice about whether the settlement is fair, reasonable or adequate. We want to know what they're agreeing to in the settlement.
>
> They want to know their rights, their risks, and their options. Vietnam veterans question the fairness of the settlement when most veterans have not been informed and the claims deadline is just around the corner.

As a result of these suggestions, the court has extended the time to file claims to January 2, 1985.

m. Need to Settle Now to Get on With Life

A veteran from Pennsylvania voiced his desire to bring the litigation to a close:

> I too would like to see the chemical companies admit that they knew what the herbicides would do, but I do not, nor do the veterans and their families, have the time to continue to fight this out in a court of law.

Many veterans spoke about how the Agent Orange controversy continues the Vietnam war for them. They feel that the government refuses to recognize that there is a problem, they feel slighted by the VA, they feel that no one appreciates the fact that they, like all veterans, fought for their country in time of need. For them, Agent Orange is part of the remaining unfinished business of the Vietnam War. As one veteran put it:

> Agent Orange and the MIA-POW [missing in action-prisoner of war] issue[s] . . . are the only real tragedies left to end that war. It will never end as long as Agent Orange is festering.

Many see the settlement as a part of the process of finally putting the Vietnam War behind us and as a step toward a better future. Some believe that although no liability has been established, the fact of the settlement gives some legitimacy to their claims, or as one of them noted, "the act of paying 180 million would have a voice of its own." Another veteran, comparing the Vietnam episode to a societal mental illness "because we have been so destructive of our veterans," illustrates this point:

> [W]hen there is an illness, the first step is to recognize it and to make an admission that it exists, and then to move from there. The $180 million settlement is a step in the much larger battle which is beyond the legal battle which would be the political battle in the political arena. Move with that toward having the recognition from the government that our veterans deserve and have a compensation from the government that our veterans deserve . . . I am hopeful this settlement will be the first step towards that political solution which I think would be the best that we would hope for.

An Oregon doorgunner in the herbicide spraying operation put it this way:

> The Challenge . . . is . . . a $180 million settlement fund is going to cause power to be created . . . . I believe firmly that we should stay positive. What has come in the past is the past . . . . We need to . . . create a system able to respond with quality assistance to all needy veterans now.

Another veteran with a deformed daughter who described a comrade's suicide ended his testimony by saying:

> I think that's the most important of all, of the feelings of what these people have really been through and I am sure that with the attorneys and everybody working hand in hand, if that's the intentions of everybody, I am sure we can come to a quick decision and we can get on with our lives and what lives we have got, let's pick up the pieces and go on and let's start living a little bit.
>
> I am tired. I am 42 years old.

n. Need for Further Research and Reassurance

The unanswered questions about Agent Orange and its effects on health exacerbate the veterans' problems. A veteran from Connecticut points out the terrible cost of our ignorance:

> A lot of veterans are out there thinking they are victims and they are not victims. A lot of veterans have created illnesses because of the controversy of Agent Orange. They think are contaminated. They don't know. None of us know whether any of these illnesses are a result of Agent Orange poisoning at this time.

And a veteran who works in one of the veterans' organizations summarizes his group's reaction to the settlement.

> [W]e came to the conclusion that had we gotten to trial we would have gotten a lot of dirt out about corporate defendants . . . . [and] various government agencies. But there would have been a chance that all of this would have jeopardized what we were seeking. We were seeking positive help for the Vietnam veterans. This is how we started out when we initiated this litigation. We started out simply to get help for the veterans . . . . [W]e see the settlement as a positive step in the right direction in obtaining help for the veterans. We really don't want to go through five more years or more of litigation. We want an end — and end to the legal controversy. Our fight now should be in the medical community and the scientific community in getting more help. And we feel this settlement can be a catalyst for that.

2. Written Communications

The court has received hundreds of letters from class members about the settlement. A few express a deep hostility toward the defendant chemical companies and the United States bordering on the irrational. Most, however, are thoughtful and helpful. The letters express essentially the same considerations referred to at the hearings. These include doubts about the existence or probability of a causal connection between exposure to Agent Orange and a host of ailments; an understanding that even if general causation were probable, there are serious legal obstacles to each individual class member's recovery; a recognition that even if the plaintiffs were ultimately to prevail after trial and on appeal, the many years it would

take to achieve that result might make any victory a Pyrrhic one; and satisfaction that "something is finally being done" for Vietnam veterans after years of perceived mistreatment and neglect.

Those who oppose the settlement do so for a variety of reasons. Some are genuinely convinced that they, their comrades and families suffer as a direct result of the use of Agent Orange in Vietnam and that the evidence and law will sustain their views. Others, while not opposed to the concept of a settlement, are dissatisfied with the amount and the nonparticipation of the government, viewed by some as the chief culprit. Many are outraged by the failure of defendants to admit culpability. Some wish a full airing of all the evidence in a public trial and oppose return or destruction of any evidence assembled through discovery.

Typical of the letters favoring settlement is one from a physician in Michigan who feels that while Vietnam veterans were unjustly treated, he has

> seen no reputable research indicating that any of the so called "Agent Orange" casualties are anything but anecdotal. I have seen studies that show that those who were most heavily exposed suffered no ill effects.

Others do believe that there is a causal connection, but believe, in the words of a New York veteran, that "to go to trial would be a disaster and turn out to be a can of worms with losers on both sides."

A veteran from California asked that the settlement be approved because

> [a]fter reading and hearing much material about this proposed settlement, I am somewhat concerned. I believe that under the circumstances revolving around such a legal suit that what was

> effected by the chemical companies is justifiable. Naturaliy only one who lives in a dream would expect to receive everything asked for. Compromise is the basis of any settlement and the benefit of compromise is [to] AVOID COURT DELAY.

As he and many class members recognize "the 180 million dollars looks damn good" because it "avoid[s] all the red tape" and eliminates the "possible chance of losing in the end."

> No more valuable time can be wasted in dealing with this matter because the victims directly involved are hurting. Compensation is one of the major priorities.

A Rhode Island veteran writes:

> We have waited long enough. Let us be done with the delays and begin now to create programs and provide services to assist present and future generations affected by the dioxins used in Southeast Asia. At last, perhaps, we shall see a light at the end of the tunnel.

Also typical of the communications favoring the settlement is a letter from an Arkansas veteran who writes that he

> feel[s] that the chemical companies did the Veterans a great justice, by settling out of court. If the veterans would have held on and went to court, they could have spent another 10 to 20 years in court.

Many of the class members express a special desire that the settlement fund be used to assist the children who were allegedly affected. As a veteran from Pennsylvania writes:

> I have seen with my own eyes the children [of exposed veterans] with birth defects . . . and I want to express to you my belief that the Federal Class Action Law Suit should be settled now, with acceptance of the Trust Fund money . . .
>
> I am blessed with a healthy son and for that I thank my Higher Power. For those of my military friends who do [have children with birth defects], I know we should do what is necessary now to start the healing process. Again, I implore you to accept the Chemical Companies Trust Fund Offer

Along the same line, a veteran from California, after detailing his wife's and children's problems which he attributes to Agent Orange, writes:

> The newly acquired monies from the lawsuit would mean nothing to me, but continued research into the dioxin-related illnesses could help thousands of others, and a fund started to aid that research would be a fitting tribute to the many who suffered for their participation in the Vietnam War. Put the money into a trust for that purpose!

Many letters are strongly negative. In the words of one letter which was circulated by a group of veterans from Iowa:

> The amount of money agreed upon by the management committee and the chemical companies does not even begin to compensate the hundreds of thousands of families for their medical expenses, not to mention physical suffering and emotional agony. More importantly, the issues of causation and liability have gone unresolved, perhaps forever.

In a similar vein, a Wisconsin veteran urged the court to reject the settlement because he believes the settlement

> is an attempt to prevent the public from finding out the true facts as to who is responsible for the use of Agent Orange. A lot of loyal U.S. servicemen are to be affected by this decision and I think that they should have their day in court.

Letters urging rejection of the settlement assume that there is a causal connection that can be proven between exposure to Agent Orange and the various illnesses and conditions Vietnam veterans suffer from. As a New Jersey veteran put it,

> [y]ou would be hard pressed to convince me that Agent Orange is not responsible for my daughters [birth defects] and my [medical] problems.

The need to "bring out the facts" is emphasized by virtually all the letters urging rejection of the settlement. As another veteran from Wisconsin put it

> the issue goes far beyond mere monetary compensation. The ultimate issue is establishing liability for damages and/or injuries arising from exposure. This settlement did not affix blame; indeed, it emphasizes that the payment is in no way an admission of guilt or liability . . . . I view this settlement as an attempt to sweep the whole issue under the rug; to cover up the plight of thousands of veterans and their families.

Many letters express frustration and anger with the way Vietnam veterans have been treated by the government and society. Typical are the comments of a New Jersey veteran:

> I volunteered for the army as soon as I was 18 years old because at that time it seemed like the right and patriotic thing to do. If I had been able to see into the future and seen how shabbily my own government and fellow Americans (nonvets) would treat all Vietnam vets, I probably would have become a draft resister and moved to Canada.

Similarly, another New Jersey veteran writes,

> When my country needed me, I went. When I needed my country, they were not there. Who will go next time?

Others believe that the government is at least as responsible, if not more so, than the chemical companies for any damage that was done; they object to the nonparticipation of the government in the settlement. In the words of a Virginia woman,

> In my opinion the government reps were aware of what we were being exposed to in RVN [Republic of Vietnam] as well as the companies. I am appalled that the government is not a defendant and that it along with the chemical companies are not admitting irresponsibility.

Another Wisconsin veteran writes:

> I want [the court] to know that I, and many of my fellow Veterans of all eras stand in protest of this proposed sell-out to big business – I feel that liability *and* responsibility go hand in hand here. This must be proven. We owe it to the thousands of Nam Vets and their families to prove this issue once and for all. We will not be used and thrown away – No more Vietnams.

As does the writer of the last quoted letter, some view the settlement as another example of a victory by "big business" represented by the chemical companies, over the "little guy," represented by the veterans. In the words of a West Virginia veteran,

> [t]hese [chemical] companies are in reality getting away with murder and torture, while we, the veterans, are getting stepped on and pushed under the rug, as usual.

In sum, there is a sharp split of opinion among class members as to whether the court should accept the settlement. Yet only a small fraction of one percent of the class has been heard from at the Fairness Hearings and in correspondence with the court. The silent majority remains inscrutable.

III. FACTUAL PROBLEMS WITH CLAIMS

There are serious factual problems with plaintiffs' case, the chief one being doubt that present scientific knowledge would support a finding of causality. In addition, problems respecting the discretionary power of the government to make decisions even when it creates dangers to individuals, and the defense the manufacturers may have because of the government's knowledge of the dangers from Agent Orange reduce substantially the prospects of recovery after trial. This legal issue is discussed in section IV, *infra,* in connection with the applicable substantive law.

A. Use of Agent Orange in Vietnam

In late 1961, President Kennedy approved a joint recommendation of the Departments of State and Defense

to initiate, on a limited scale, defoliant operations in Vietnam. The decision made at these high levels provides a basis for the argument that the government in its discretion knowingly assumed the risks. If so, there is possibly no right to sue the government under the Federal Tort Claims Act and since at least some of the manufacturers claim that they were compelled to supply the government under various war power acts, governmental immunity might accrue to them to some degree. *See* IV, C, nature of Liability and Relation to Defense of Government Knowledge, *infra.*

Project Ranch hand, as the Air Force defoliation program became known, began its spray missions in January 1962. *See generally,* W. Buckingham, *Operation Ranch Hand, The Air Force and Herbicides in Southeast Asia 1961-1971* at 29-31 (1982); G. Lewy, *America in Vietnam,* 257-66 (1978). Initially the aerial spraying took place near Saigon; its purpose was to clear the thick jungle canopy from around roads, power lines and other lines of communications in order to lessen the potential of ambush. There was also some hand spraying from the ground around gun emplacements and the like to reduce surprise attacks and maintain open lines of fire. By late 1962 approval was granted for offensive use of herbicides to destroy planted fields and crops suspected of being used by the Viet Cong. The use of herbicides for crop destruction peaked in 1965 when 45% of the total spraying was designed to destroy crops.

Various herbicides were used for defoliation and crop destruction spraying in Vietnam including Agent Blue (cacodylic acid), Agent White (a mixture of 80% triisopropanol amine salt of 2,4-dichlorophenoxyacetic acid (2,4-D) and picloram), Agent Purple (a formulation of 50% n-butyl ester of 2,4-D, 30% n-butyl ester of

2,4,5-trichlorophenoxyacetic acid (2,4,5-T) and 20% isobutyl ester of 2,4-D), Agent Green (100% n-butyl ester of 2,4,5-T and Agent Pink (60% n-butyl ester of 2,4,5-T and 40% isobutyl ester of 2,4,5-T).

After 1964, Agent Orange, a 50-50 mixture of the n-butyl esters of 2,4-D and 2,4,5-T was one of the most widely used herbicides, along with Agent White and Agent Blue. *See* A.L. Young, J.A. Calcagni, C.E. Thalken & J.W. Tremblay, *The Toxicology, Environmental Fate, and Human Risk of Herbicide Orange and its Associated Dioxin,* USAF OEHL Technical Report (Oct. 1978); R. Bovey & A. Young, *The Science of 2,4,5-T and Associated Phenoxy Herbicides* (1980). Phenoxy herbicides such as Agents Orange, White, Pink and Green are growth regulators that kill certain plants by inducing malfunctions in the growth process. Agents Pink and Green were rarely used after Agent Orange was introduced in early 1965. Agent Orange proved to be an effective defoliant when used in heavy concentrations and was used on a wide of woody and broadleaf herbaceous plants, causing discoloration and dropping of leaves. Agent White was especially useful in killing conifers. Agent Blue was used primarily for crop destruction.

Evaluation of the early Ranch Hand missions recommended increasing the amount of herbicide sprayed per acre. The first mission in 1962 lasted three days and used 7920 gallons of herbicide to cover 6920 acres. *See* W. Buckingham, *Operation Ranch Hand, supra,* at 36. In September 1962, in a four-week period, Ranch Hand sprayed more than 9000 acres with 27,648 gallons of Agent Purple, clearing vegetation along rivers and canals on the Cau Mai Peninsula in the Mekong Delta. *Id.* at 62. This application rate of three gallons of herbicide per acre became the starndard for spraying in Vietnam. Domestical-

ly, herbicides such as 2,4-D and 2,4,5-T were applied at a rate of one gallon per acre.

Occasionally, because of malfunctions and the need of aircraft to escape enemy fire, much higher concentrations were dropped suddenly on small areas. Miscalculations, drifts and respraying undoubtedly caused heavier concentrations in some instances than the planned three gallons per acre.

As the war in Vietnam escalated in the mid-1960s, so too the use of herbicides expanded. In 1967, the peak year for herbicide spraying in South Vietnam, 1,687,758 acres were sprayed — 85% for defoliation purposes and 15% for crop destruction. W. Buckingham, *Operation Ranch Hand, supra,* at 129. Eighteen to twenty-seven sorties were flown per day. *Id.* at 131.

Beginning about 1967 herbicide spraying in Vietnam became the subject of increasing controversy in this country and abroad. A report prepared by the Bionetics Research Laboratory for the National Institutes of Health in 1969 indicated that 2,4,5-T, a major component of Agent Orange and other herbicides used in Vietnam, could cause malformed offspring and stillbirths in mice when administered in high dosage to the mothers. The Bionetics study has been criticized on the ground that the test conditions greatly increased the amount and intensity of exposure. *See, e.g.,* W. Buckingham, *Operation Ranch Hand, supra,* at 163-64.

On April 15, 1970, the Secretaries of Health, Education and Welfare, Agriculture and the Interior issued a joint statement suspending domestic use of herbicides containing 2,4,5-T except for limited non-crop uses.W. Buckingham, *Operation Ranch Hand, supra,* at 166; *see also Dow Chemical Co. v. Ruckelshaus,* 477 F.2d 1317,

1318-19 (8th Cir. 1973); *Citizens Against Toxic Sprays, Inc. v. Bergland* 428 F.Supp. 908, 914 (D.Or. 1977); *United States v. Vertac Chemical Corp.*, 489 F.Supp. 870, 881 (E.D.Ark. 1980). That same day, the Department of Defense suspended military use of 2,4,5-T, including Agent Orange, "pending a more thorough evaluation of the situation." W. Buckingham. *Operation Ranch Hand, supra,* at 166. Thereafter, herbicide spraying for defoliation continued for a short while, using Agent White. Crop destruction, utilizing Agents White and Blue, continued throughout 1970. In January 1971, the last Ranch Hand mission took place.

Overall, between 17 and 19 million gallons of Agents Orange, White and Blue were procured by the United States and disseminated in Vietnam between January 1965 and February 1971. A.L. Young, J.A. Calcagni, C.E. Thalken & J.W. Tremblay, *The Toxicology, Environmental Fate, and Human Risk of Herbicide Orange and its Associated Dioxin, supra,* I-10. A study by the National Academy of Sciences concluded that herbicides had been sprayed on 10.3% of inland forests, 36.1% of mangroves and 3% of cultivated areas. *Id.* at I-11. Between eight and ten percent of the total land area in South Vietnam was sprayed. *Id.*

It is estimated that the seven defendant chemical companies manufactured approximately 99% of all Agent Orange used by the military between 1965 and 1970. After cessation of herbicide spraying in February 1971, approximately 2,220,000 gallons of Agent Orange remained unused – 1,370,000 gallons in Vietnam which was shipped to Johnston Island in the Pacific Ocean for storage, and 850,000 gallons stored at Gulfport, Mississippi. W. Buckingham, *Operation Ranch Hand, supra,* at 183. The

average dioxin contamination of these more than 2 million gallons of left-over Agent Orange was estimated at approximately 2 parts per million (ppm). *Id.* Of 200 samples of the Agent Orange that had been shipped to Johnston Island for storage, four contained more than 15 ppm of dioxin, with one sample as high as 47 ppm. Of the samples tested at Gulfport, none contained more than 15 ppm. A.L. Yong, J.A. Calcagni, C.E. Thalken & J.W. Tremblay, *The Toxicology, Environmental Fate, and Human Risk of Herbicide Orange, supra,* at I-21. *See also* Veterans Administration, *Review of Literature on Herbicides Including Phenoxy Herbicides and Associated Dioxins,* Vol. I, 2-21 (1982).

The teratogenic effects – that is the effect on a fetus of exposure of the mother during pregnancy – associated with high level doses of 2,4,5-T in the Bionetics report were subsequently determined to result from a toxic contaminent in 2,4,5-T, identified as 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). TCDD enters the 2,4,5-T product during the manufacture of trichlorophenol (TCP), a necessary precursor chemical for 2,4,5-T; some of the TCDD generated in the manufacture of TCP caries forward into 2,4,5-T and thus into the phenoxy herbicides containing 2,4,5-T.

B. Claimed Effects of Contact with Agent Orange in Vietnam

1. General Considerations

The basic problem with the plaintiffs' factual case was succinctly and accurately stated in a memorandum by counsel to a large number of plaintiffs, dated December 28, 1983, edited January 25, 1984, and attached to an affirmation filed July 26, 1984. It stated:

> [The] class action . . . is now careening toward a trial in May without the basic information necessary to establish a causal relation between exposure to dioxin contaminated phenoxy herbicides in Vietnam and the illness, disability, and death of the plaintiff veterans. There is not sufficient command of the biological, chemical, medical, epidemiological, and genetic evidence to establish a causal relation between the disease, disability and death of the plaintiff veterans much less the catastrophic polygenetic birth defects afflicting their children.

Plaintiffs' factual case may be briefly summarized. Agent Orange contained small quantities of dioxin. Dioxin is a potent poison which can cause serious harm to humans. Many plaintiffs suffer from diseases that can be caused by dioxin. Dioxin caused the diseases. The logical and practical difficulty with their argument is that the diseases referred to may result from causes other than dioxin poisoning.

As to the poisonous nature of dioxin and its ability to cause harm to mammals, including homo sapiens, there is no doubt. The form of dioxin implicated in Agent Orange is a dangerous, stable, long lasting chemical. *See, e.g.*, R.E. Tucker, A.L. Young & A.P. Gray, *Human and Environmental Risks of Chlorinated Dioxins and Related Compounds,* section on Environmental Chemistry, and Environmental Toxicology, 143-341 (1983); M.P. Esposito, T.O. Tiernan & F.E. Dryden, U.S. Environmental Protection Agency, *Dioxins* 230-256 (1980); A. Hay, *The Chemical Scythe* 32 (1982)

Dioxin is one of the most powerful poisons known, as is indicated by the following table.

SUBSTANCE	MOLECULAR WEIGHT	MINIMUM LETHAL DOSE (MOLES/KG)
Botulinum toxin A	9.0×10^5	3.3×10^{-17}
Tetanus toxin	1.0×10^6	1.0×10^{-15}
Diphtheria toxin	7.2×10^4	4.2×10^{-12}
2,3,7,8-TCDD	322	3.1×10^{-9}
Saxitoxin	372	2.4×10^{-8}
Tetrodotoxin	319	2.5×10^{-8}
Bufotoxin	757	5.2×10^{-7}
Curare	696	7.2×10^{-7}
Strychnine	344	1.5×10^{-6}
Muscarin	210	5.2×10^{-6}
Diisopropylfluorophosphate	184	1.6×10^{-5}
Sodium cyanide	49	2.0×10^{-4}

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M.P. Esposito, T.O. Tiernan & F.E. Dryden, U.S. Environmental Protection Agency, *Dioxins* 188 (1980). *See generally* R.E. Tucker, A.L. Young & A.P. Gray, *Human and Environmental Risks of Chlorinated Dioxins and Related Compounds* (1983); Veterans Administration, *Review of Literature on Herbicides Including Phenoxy Herbicides and Associated Dioxins* Vols. I, II, III (1981, 1983); Centers for Disease Control, Protocol for Epidemiologic Studies of the Health of Vietnam Veterans (Nov. 1983).

There is also little doubt that many servicepersons were exposed to some amounts of herbicides containing at least trace amounts of dioxin while they were in Vietnam. The following map and tables from volume I of the *Review of*

Literature on Herbicides, Including Phenoxy Herbicides and Associated Dioxins suggest the extent of the spraying. These charts do not help much in determining extent of exposure since, for example, a great deal of the herbicide was in the high canopy of jungle trees and samples of Agent Orange showing relatively high dioxin content may have been taken from unused batches. *Id.* at 2-20 to 2-22. Although no one can tell exactly how much dioxin was involved, a reasonable estimate for the years 1965 to 1971, the time of heaviest troop involvement in Vietnam, is 240 pounds. At the *Review of Literature* puts it:

> Overall, the spraying of more than 11.3 million gallons of Orange/Orange II from August 1965 through February 1971 is estimated to have released close to 240 pounds of TCDD, assuming that the average concentration of TCDD . . . was 2 ppm (2.IX 10 pounds per gallon).

Id. at 2-22. Another estimate for the years 1962 to 1971 is 368 pounds, although some of this total may have come from herbicides other than Agent Orange. *See* B.B. Dan, Vietnam and Birth Defects, 252 J.A.M.A. 936 (1984). The differences are not significant for present purposes given the large amount of Agent Orange sprayed and the wide area over which it was spread.

[From Veterans Administration, Review of Literature on Herbicides, including Phenoxy Herbicides and Associated Dioxins, Vol. I, Fig. 2-6, at 2-13.]

APPLICATION OF HERBICIDES IN THE VIETNAM WAR BY YEAR

Millions of Gallons

Year	1962-July 1965	Aug-Dec 1965	1966	1967	1968	1969	1970	1971	Total
Orange	NA*	.37	1.64	3.17	2.23	3.25	.57	.00	11.22
White	NA*	0	.53	1.33	2.13	1.02	.22	.01	5.24
Blue	NA*	0	.02	.38	.28	.26	.18	.00	1.12
Total	1.27	.37	2.19	4.88	4.63	4.53	.97	.01	18.95

*Not Available

[From Veterans Administration, *Review of the Literature on Herbicides, Including Phenoxy Herbicides and Associated Dioxins*, Vol. I Table 2-1, at 2-16.]

ANNUAL NUMBER OF ACRES SPRAYED IN VIETNAM*

Year	Acres*
1962	5,724
1963	24,920
1964	93,869
1965	221,552
1966	608,106
1967	1,570,114
1968	1,365,479
1969	1,365,754
1970	294,925
1971	

*Acres sprayed more than once are counted as additional acres sprayed.

[From Veterans Administration, *Review of Literature on Herbicides, Including Phenoxy Herbicides and Associated Dioxins*, Vol. I Table 2-2, at 2-17.]

As the various industrial accidents in which people were exposed to heavy doses of dioxin in a single event or smaller doses over a longer period show, dioxin may be highly toxic to humans. This conclusion is confirmed by experience with contamination around homes and farms. Animal studies also suggest the serious harm that this poison can cause. These studies and data are considered more fully in III, C, Scientific Studies on Effect of Contact with Agent Orange, *infra.*

It is important in considering the facts to keep clearly in mind in this section and the sections that follows the different problems of proof posed in determining if dioxin *can cause* certain diseases and whether it *did cause* a particular disease or defect in a particular person. This is an issue to which we now turn and return to again and again in the course of this opinion.

In this connection we note that a number of letters and statements at the Fairness Hearings suggest that there may be a failure among some class members to distinguish between the *avoidance* or risks by regulation and legislation designed to prevent injuries on the one hand, and the *compensation* for injuries, particularly through tort law, on the other. For example, a number of class members pointed out that while the government refuses to compensate veterans and defendants continue to deny liability in this case, the United States has spent large sums cleaning up toxic wastes and compensating "victims" of the chemical dumps, most notably in Times Beach, Missouri. *See, e.g.*, A. Hay, *The Chemical Scythe* 229-43 (1982) (description of the Love Canal incident); *cf.* A.L. Young, J.A. Calcagni, C.E. Thalken & J.W. Tremblay, *The Toxicology Environmental Fate, and Human Risk of Herbicide Orange and its Associated Dioxin*, USAF OEHL Technical Report, V-17 to V-19 (Oct. 1978) (description of

the Eastern Missouri Horse Arena episode in which heavily contaminated oils were spread on farm property).

The distinction between avoidance of risk through regulation and compensation for injuries after the fact is a fundamental one. In the former, risk assessments may lead to control of a toxic substance even though the probability of harm to any individual is small and the studies necessary to assess the risk are incomplete; society as a whole is willing to pay the price as a matter of policy. In the latter, a far higher probability (greater than 50%) is required since the law believes it unfair to require an individual to pay for another's tragedy unless it is shown that it is more likely than not that he caused it. *See, e.g, Ayers v. Jackson Tp.*, 189 N.J.Super. 561, 461 A.2d 184, 187 (N.J.Super. Ct.Law Div.1983) (increased risk of exposure to contaminated water not enough for tort liability because of "speculative" nature of proof) *Pierce v. Johns-Manville Sales Corp.*, 296 Md. 656, 464 A.2d 1020, 1026 (C.A. Md. 1983) (applying 50% probability rule to asbestos exposure). *See generally* ALI-ABA, Symposium on Environmental Law sponsored by the Environmental Law Institute and the Smithsonian Institute, February 23-25, 1984, Washington, D.C.; Grad, Hazardous Waste Victim Compensation: The Report of the § 301(e) Superfund Study Group, 13 Envtl.L.Rep.10234 (1983); Office of Science and Technology Policy, Chemical Carcinogens: Review of the Science and Its Associated Principles, 49 Fed.Reg. 21594, 21596 (1984); D.G. Barnes, Regulatory Actions in Dioxins and Related Compounds, *in* R.E. Tucker, A.L. Young & A.P. Gray, *Human and Environmental Risks of Chlorinated Dioxins and Related Compounds* 23-31 (1983).

In both the regulatory and tort models, the *techniques* for assessment of the probabilities of risk can be similar —

courts need not deny themselves the same sophisticated methods used by regulatory agencies. National Research Council, Steering Committee on Identification of Toxic and Potentially Toxic Chemicals for Consideration by the National Toxicology Program, *Toxicology Testing* 349 (1984).

The statistical and other scientific bases for finding possible dangers from the use of Agent Orange might be more than enough for a court to uphold governmental action limiting its use, particularly in view of the need to defer to an administrative agency. *See, e.g., Batterton v. Marshall,* 648 F.2d 694, 699-710 (D.C.Cir.1980) (statistical methodology for a rule); *FMC Corp. v. Train,* 539 F.2d 973 (4th Cir.1976); *National Association of Metal Finishers v. Environmental Protective Agency,* 719 F.2d 624 (3d Cir.1983) (toxic pollutants and causation), *cert. granted,* ____ U.S. ____, 104 S.Ct. 2167, 80 L.Ed.2d 551 (1984); *Lead Industries Association v. Environmental Protection Agency,* 647 F.2d 1130 (D.C. Cir.) (standard deviation method not arbitrary), *cert. denied,* 449 U.S. 1042, 101 S.Ct. 621, 66 L.Ed.2d 503 (1980). Even given such deference, some courts might have difficulty in finding a causal relationship between Agent Orange use in Vietnam and dangers to servicepersons. *See, e.g., Ethyl Corporation v. Environmental Protection Agency,* 541 F.2d 1 (D.C.Cir.) *cert. denied,* 426 U.S. 941, 96 S.Ct. 2663, 49 L.Ed.2d 394 (1976), where the court was sharply divided on the issue of cause and the probative force of epidemiological studies. *See generally* National Research Council, Committee on the Institutional Means for Assessment of Risks to Public Health, *Risk Assessment in the Federal Government: Managing the Process* (1983); Office of Science and Technology Policy, Chemical Carcinogens: Review of the Science and its Associated Principles, 49

Fed.Reg. 21594 (1984); ALI-ABA Conference on Environmental Law, *supra,* at 48-49; Proceedings of the Seventh Symposium on Statistics and the Environment, 37 American Statisticians 359 ff. (1983). Regardless of what regulatory action would be justified by current evidence, as noted in III, B, 2, Plaintiffs' Evidence of Causality and III, C, Scientific Studies on Causality, *infra,* such evidence would not be sufficient to find an individual defendant liable to an individual plaintiff.

2. Plaintiffs' Evidence of Causality

The critical problem for the plaintiffs is to establish that the relatively small quantitites of dioxin to which servicepersons were exposed in Vietnam caused their present disabilities. Here adequate proof is lacking.

Since no motion for summary judgment based on inability to demonstrate causation was made, the exact evidence plaintiffs were relying upon to satisfy their burden of proof on the issue was never fully set forth. Some indication of their theory is contained in their draft memorandum on "Distribution and Administration of Settlement Fund" dated June 1, 1984. See also the references in plaintiffs' Fairness Brief to expected scientific testimony on particular plaintiffs, *infra.* A central problem under plaintiffs' theory would be establishing a causal relationship between exposure and discrete diseases. As yet little if any scientific support for plaintiffs' views has been developed.

Even if we assume that chloracne in veterans was caused by exposure to Agent Orange, plaintiffs concede that the government contract defense, *see* IV, C, Nature of Liability and Relation to Defense of Government Knowledge, *infra,* represents a substantial impediment to recovery for

this disease. It was well known in the 1960's that workers' exposure to dioxin in herbicides caused chloracne, so that the government's knowledge of this fact was probably as great as that of the manufacturers.

The kind of study necessary to support some of the hypotheses of plaintiffs' experts is now being undertaken by the Centers for Disease Control. *See* Centers for Disease Control, Protocol for Epidemiologic Studies of the Health of Vietnam Veterans (Nov. 1983) ("CDC Protocol") (101 page detailed description of study). Assuming that the study was started in December, 1983 as planned, it would take 69 months to complete the report – i.e., if all goes well it will be available in mid-1989. *Id.* at 40. A partial copy of the CDC Protocol is printed as Appendix F to indicate the difficulty of obtaining satisfactory proof. [omitted.] Courts cannot, unfortunately, wait indefinitely until all scientists have completed their long term studies. They must decide on information now available.

In the intensive study of the Ranch Hand personnel who conducted most of the spraying and had most contact with Agent Orange, no statistically significant dermatological differences were found between these men and a control group. Air Force Health Study, *An Epidemiologic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides,* XV-9 (Feb. 24, 1984) (Ranch Hand II Study - 1984 Report).

The evidence with respect to birth defects is even more tenuous. Male mediated birth defects might theoretically result from exposure of the father to Agent Orange, but no supporting data associating dioxin exposure of males with birth defects of children has been made available.

No test, plaintiffs' experts apparently concede, is decisive in proving exposure to Agent Orange, partly be-

cause, as one expert put it, "all of us have probably been exposed to dioxin at some time." Their sugestion that combinations of symptoms "hold the most promise for determining possible exposure to dioxin," is certainly worth study, but could not now be the basis for recovery in a lawsuit, where relatively high degrees of probative force are required.

In short, the evidence provided by the plaintiffs to date on general causality, while supportive of the desirability of further studies, lacks sufficient probative force – except in the case of chloracne – to permit a finding of general causality. It might require the direction of a verdict for defendants at the end of plaintiffs' case. It simply is not sufficient to point to an individual and show that he was exposed to Agent Orange and had a cancer. The incidence of cancers of the type suffered by plaintiffs in the population as a whole make it at least as likely, based upon present knowledge, that the cancer resulted from causes other than Agent Orange. The problems with plaintiffs' factual case are even greater with respect to birth defects and miscarriages.

The scientific data relied upon by defendants, a subject to which we turn in the next section, throws even greater doubt on plaintiffs' case. This litigation presents quite a different picture from one where long term repeated exposure to a highly toxic substance leads a number of acknowledged experts to state flatly that the exposure caused the disease. *See, e.g., Ferebee, Jr. v. Chevron Chemical Co.*, 736 F.2d 1529 (D.C.Cir.1984) (repeated intensive exposure to paraquat; experts' positive testimony as to specific causation). We are not dealing here with exposure of workers in a factory or laboratory to dioxin in concentrated amounts where the probative force of the evidence on causality may be substantial.

As all experts, both plaintiffs' and defendants', recognize, "[t]he dose-response relationship at low levels of exposure for admittedly toxic chemicals is one of the most sharply contested questions currently being debated in the medical community." *Id.* at 1536. *See also, e.g.,* National Research Council, Steering Committee on Identification of Toxic and Potentially Toxic Chemicals for Consideration by the National Toxicology Program, *Toxicity Testing* (1984); R.E. Tucker, A.L. Young, & A.P. Gray, *Human and Environmetnal Risks of Chlorinated Dioxins and Related Compounds* (1984); Office of Science and Technology Policy, Chemical Carcinogens: Review of the Science and Its Associated Principles, 49 Fed.Reg. 21594 (1984); Proceedings of the Seventh Symposium on Statistics and the Environment, 37 American Statistician 359 (1983); National Research Council, Committee on the Institutional Means for Assessment of Risks to Public Health, *Risk Assessment in the Federal Government: Managing the Process* (1983); Leape, Quantitative Risk Assessment in Regulation of Environmental Carcinogens, 4 Harv.Envt'l L.Rev. 86, 100-03 (1980).

The problem of obtaining useful data on the effects of Agent Orange is particularly difficult for a number of reasons. First, the relatively young males who served in Vietnam were a highly selected, healthy group so that the expected mortality was relatively slight in their early ages and a comparison with base civilian populations is difficult. Second, there may be many confounding factors that explain diseases such as stress of combat and local natural and man-made carcinogens. Third, the cancers involved may take a long time to reveal themselves since they become important in a epidemiologic sense only in older age groups. Some of the problem is revealed in the table below, taken from the Air Force Health Study of some

1000 Air Force personnel, showing very few cancers among the control group or the Ranch Hand group.

TOTAL MORTALITY AND MORBIDITY STUDY
MORPHOLOGY OF SYSTEMIC NEOPLASM

ICD-O CODES	NOMENCLATURE	MORTALITY		MORBIDITY	
		Ranch Hand	Comparison	Comparison	O S R
M800	Neoplasm not otherwise specified (NOS)				
	Bronchus and Lung	0	1	0	0 0 0
	Intestinal Tract	0	1	0	0 0 0
M801-804	Epithelial neoplasms				
	Appendix	0	0	0	1 0 0
	Bladder	0	0	0	1 0 0
	Bronchus and Lung	1	1	1	0 0 0
	Kidney	1	0	0	0 0 0
	Lip	0	0	1	0 0 0
	Nasopharynx	0	1	0	0 0 0
	Tongue	0	0	1	1 0 0
	Unspecified site	12	1	0	0 0 0
	Vocal Cord	0	0	0	1 0 0
M805-808	Papillary and Squamous Cell				
	Lip	0	0	2	2 0 0
	Lung	0	0	1	0 0 0
M812-813	Transitional Cell Papillomas and Carcinomas				
	Bladder	0	0	2	0 1 0
M814-838	Andenomas and Adenocarcinomas				
	Bronchus and Lung	0	1	0	0 0 0
	Colon	0	0	0	2 0 1
	Kidney	0	1	1	0 0 0
	Prostate	0	0	1	1 0 0
	Pancreas	0	0	0	1 0 0
M850-854	Ductal, lobular, and medulary neoplasms				
	Thyroid	0	0	0	1 0 0
M872-879	Nevi and Melanomas				
	Mediastinal	1	0	0	0 0 0

M905	Mesothelioma				
	Bronchus and Lung	0	1	0	0 0 0
M906-909	Germ cell noplasms				
	Testicle	0	0	2	0 0 0
M938-948	Gliomas				
	Frontal Lobe	0	1	1	0 0 0

[From Ranch Hand II Study - 1984 Report, Table X-6]

Even in cohorts as large as 6000, such as that being used in the Centers for Disease Control Study of Veterans, the incidence in the general population of diseases of particular concern in this case is so low that changes due to exposure to any one chemical such as Agent Orange are difficult to detect. This is shown by the table below.

Estimated Prevalence of Vietnam Service and Expected Number of Cases of Cancer for the Selected Cancers Case-Control Study in Males Aged 30-54 in 1986 in the SEER Areas

			Estimated Yearly Number of Cases[3]			
Age	Number of Males[1]	Prevalence of Vietnam Service[2]	Soft Tissue[4] Sarcoma	Lymphoma[5]	Nasal and[6] Nasopharyngeal	Primary Live[7]
30-34	980	4.9	20	53	4	3
35-39	907	11.7	14	45	5	3
40-44	740	12.5	17	52	6	5
45-49	590	3.7	22	75	10	12
50-54	552	1.5	33	106	17	20
Total	3,769	7.4	106	331	42	43

[1] Estimated number of males (thousands) in SEER areas, 1976 data projected to 1986, National Cancer Institute Monograph 57, 1981.

[2] Percent of males who are Vietnam veterans; estimated from VA data on numbers of Vietnam era veterans and assumption that 3.2% of Vieetnam era veterans served in Vietnam.

[3] Incidence of cancers derived from National Cancer Institute Monograph 57, 1981.

[4] Includes the following (morphology-based) tumor types: fibrosarcoma, malignant fibrous histiocytoma, liposarcoma, leiomyosar-

coma, rhabdomyosarcoma, Kaposi's sarcoma (estimate based on pre-AIDS incidence), blood vessel sarcoma, nerve sheath sarcoma, synovial sarcoma, malignant mesenchymoma, malignant paragarglioma. Incidence estimates also based on categories "sarcoma NOS" and "other sarcoma."

[5] Includes Hodgkin's Disease and non-Hodgkin's lymphoma.

[6] Includes the following topogrphic tumor types: nasopharynx, nasal cavity, accessory sinuses.

[7] Includes liver and intrahepatic bile ducts.

[From CDC Protocol, Table 4]

A government administrative agency may regulate or prohibit the use of toxic substances through rulemaking, despite a very low probability of any causal relationship. A court, in contrast, must observe the tort law requirement that a plaintiff establish a probability of more than fifty percent that the defendant's action injured him. *See* IV, B, Failure to Determine Who Was Harmed and Who Caused Harm, *infra*. This means that at least a two-fold increase in incidence of the disease attributable to Agent Orange exposure is required to permit recovery if epidemiological studies alone are relied upon.

The numbers are such that even when we put aside such confounding factors as use of drugs administered for malaria or self administered through smoking or drinking, special stresses and natural carcinogens peculiar to service in Vietnam, *see e.g.*, S. Karnow, Vietnam, A History 25-26 (1983), increased relative risks are hard to prove. This point is illustrated by the table set out below and other tables of the CDC Protocol for Epidemiologic Studies of the Health of Veterans at 43, 48-49; *see also* Appendix F. Extrapolations to all Vietnam veterans (approximately 2,400,000) from the table below,

which is designed for 6,000, can be obtained by multiplying the table's figure by 400. These figures, it should be pointed out, are for a sample civilian population and therefore do not take account of special health and other factors that may affect Vietnam veterans. Putting aside such problems, the total expected deaths of veterans after the war would be in the order of 85,000. More than 52,000 deaths would be violent – accident, homicide and suicide – about the number of deaths of United States servicemen in Vietnam from 1961 to 1972. *The New Columbia Encyclopedia,* Vietnam War, 2891 (1975).

Cumulative Expected Numbers of Deaths by Cause[1]
in a Hypothetical Cohort of 6,000 Men Aged 22 in 1968
and Followed Through 1984 (17 Years)

Cause of death[2]	Expected Number of Deaths
All causes	213.0
Accidents (E800-E949)	79.1
Motor vehicle (E810-E823)	48.3
Other (E800-E807, E825-E949)	30.8
Suicide (E950-E959)	25.5
Homicide (E960-E978)	27.3
Diseases of Heart (390-398, 402, 410-429)	18.6
Malignant Neoplasms (140-204)	17.3
Cirrhosis of liver (571)	6.6
Cerebrovascular diseases (430-438)	3.6
Influenza and Pneumonia (470-474, 480-486)	2.9
Diabetes Mellitus (250)	2.1
Nephritis and nephrosis (580-584)	0.7

Bronchitis, emphysema and Asthma (490-493)	0.5
Septicemia (038)	0.5
All other causes (residual)	28.2

[1] Expected numbers based on 1978 U.S. age-specific rates for males. The age-specific rates were quinquennial (5 years), and the cumulative rates used to derive the expected numbers were computed by weighting the quinquennial rates by the number of years of cohort experience in each quinquennium (constant cohort size). Source of rates: Vital statistics of the U.S.: 1978, Vol. II, Mortality Part A, NCHS, 1982.

[2] Numbers in parentheses are the relevant codes from the Eighth Revision International Classification of Diseases, Adapted.

[From CDC Protocol, Table 1]

Yet, despite the lack of general scientific evidence, it cannot be said without hearing the evidence that the plaintiffs could not possibly recover. In Plaintiffs' Fairness Brief, dated Augtust 7, 1984, at 38-43, they summarize their evidence on representative plaintiffs based upon their proposed expert opinion testimony. The flavor of their claims is illustrated by the following paragraph (citations to depositions and some omissions not indicated):

> As to those Representative Plaintiffs whose cases were to be tried beginning May 7, 1984, Plaintiffs' experts, Dr. Alastair Hay, Dr. Ellen Silbergeld, Dr. Marvin Legator, Dr. Lennart Hardell, Dr. Ronald Codario, Dr. Peter Orris and Dr. Alan Levi, testified [in depositions] that in their scientific opinions, based on reasonable medical and/or scientific certainty and/or probability certain specific conditions of the 5 Representative Plaintiff veterans resulted from their exposure to Agent Orange in Vietnam. Further, Dr. Silbergeld, Dr. Legator, and Dr. Levin testified that the birth defects suffered by Chad and

> Michael Jordan and Kerry Ryan were the result of their fathers' exposure to Agent Orange, with its contaminant dioxin, in Vietnam. More specifically, Dr. Hardell, Dr. Legator, Dr. Silbergeld, Dr. Levin, Dr. Codario and Dr. Orris testified that George Ewalt's basal cell carcinoma, David Lambiotte's lymphocytic lymphoma and basal cell carcinoma and Danny Ford's rhadbomyosarcoma (a soft-tissue sarcoma) were proximately caused by these veterans' exposure to Agent Orange in Vietnam.

This positive evaluation of the depositions is that of plaintiffs' counsel, not that of the court. How effective the testimony would be at trial is not clear. The birth defect testimony would be subject to analysis in light of the study published by the Centers for Disease Control *after* the depositions relied upon by plaintiffs. *See* III, C, Scientific Studies on Causality, *infra*. Briefs and other materials from defendants throw substantial doubt on the probative force of this evidence and indicate that highly persuasive contrary evidence on specific causality would have been offered had the case gone to trial. See the extensive brief submitted by defendants in support of the settlement, dated August 24, 1984, devoting 260 pages to the proposition that plaintiffs cannot prove causation, with extensive documentation.

It is possible that the court would have admitted all the experts' evidence offered by both sides, leaving it to the jury to decide credibility. *See* Federal Rules of Evidence, Rules 702, 703. Experience with hundreds of Eastern District of New York juries over an eighteen year period gives the court no confidence in predicting how the jury would evaluate this evidence. Based on the evidence so far provided, however, even if the case were permitted to go to a jury

and even were there a verdict for plaintiffs, it appears doubtful whether the verdict would have withstood a post-trial motion for judgment, notwithstanding the verdict in the trial and appellate courts. This legal evaluation shared by almost all attorneys from both sides in the case provides a strong inducement for plaintiffs to settle.

C. Scientific Studies on Causality

The effect of exposure to dioxin has been and is being studied at least as intensively as that of any other toxic substance. To date none of the studies furnish sufficient support for plaintiffs' causality claims to warrant a recovery by individuals.

A number of state studies of Agent Orange effects on veterans do not provide substantial support to plaintiffs because of their small size, self-selective nature and other defects. *See, e.g.*, G.R. Newell, Development and Preliminary Results of Pilot Clinical Studies (March 26, 1984) (Texas Study); New York State Temporary Commission on Dioxin Exposure, What You Should Know About Dioxin (January 1983) (New York Report). *See also* 3 Agent Orange Rev. 1 (July 1984) (describing other ongoing state studies). At the hearings in New York, representatives of New Jersey's Agent Orange Commission indicated that New Jersey was about to undertake a scientific study, but its results will probably not be available for a year or more. At the Chicago hearings a proposed Wisconsin study was described, but it will not be available until at least December 1985. A reference to the Australian study of birth defects is made in the Study of the Centers for Disease Control described in the next section; it is essentially negative.

The Texas study of 85 men with the assumed highest exposure to Agent Orange provided no statistically significant correlation with observed cell aberrations. Texas Study, *supra,* at 12-13. There also was no demonstrated effect on sperm characteristics. *Id.* at 14-15. Immunologic studies also proved essentially negative. *Id.* at 16-18. The New York State sponsored studies, one a proportional mortality rate study and another, an epidemiological study of soft tissue sarcoma, both based primarily on death certificates are expected to be published late in 1984. New York Report at 13. The value of the New York Studies has been recognized as extremely limited. *See* New York State Department of Health, *Dioxin Exposure* 28-29 (April 1982).

The most intensive Agent Orange study of effects on veterans published to date is that of the Air Force. Air Force Health Study, *An Epidemiologic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides* (February 24, 1984) (Ranch Hand II Study – 1984 Report). This study utilized 1024 matched pairs of men for analysis. *Id.* at v. Essentially all those who had participated in the fixed wing spraying and who could be located were studied. The conclusion was negative. In summary,

> This baseline report concludes that there is insufficient evidence to support a cause and effect relationship between herbicide exposure and adverse health in the Ranch Hand group at this time.

Id. at iii.

Undoubtedly this conclusion is subject to reevaluation insofar as it is sought to extrapolate from it to the entire class of plaintiffs. It is, for example, obvious that Air

Force personnel who generally have clean clothes and showers available at the end of their missions are in a far different situation from a marine or soldier in the jungle who may be drinking contaminated water and living under primitive conditions in sprayed areas.

There were a number of anomalies noted in the Ranch Hand Study. For example, significantly more nonmelanotic skin cancers were observed in the ranch handers, but whether that was due to differences in exposure to sunlight – the prime etiology of these cancers – was not determined. *Id.* at ii. Ranch Hand offspring "showed significantly more minor birth defects (birth marks, etc.) . . . . [N]eonatal deaths and physical handicaps were also significantly excessive in the Ranch Hand Group," but there was an inconsistent relationship to the herbicide exposure index. *Id.* Subjective deficits such as fatigue, anger, fear and anxiety were higher in the Ranch Hand personnel. *Id.* Significantly, however, "no case of chloracne were diagnosed clinically or by biopsy." *Id.* at iii, XV-9.

It is fair to say that some of the Ranch Hand Study findings were "puzzling." *Id.* at iii. The small sample and other factors, particularly the length of time it takes for most cancers to develop, support the conclusion that more work is needed before any firm conclusion can be reached respecting morbidity. *Id.* at v. The authors support a 20 year mortality follow-up study. *Id.* at v., XVIII-1.

The Ranch Hand Study authors state that "[i]n full context, the baseline study results should be viewed as reassuring to the Ranch Handers and their families at this time." *Id.* at iii; *see also id.* at XIV-4 to XIX-9. Their study, however, offers no solace to either defendants or plaintiffs in the instant litigation. It simply seems inconclusive.

The other major study of the effect of Agent Orange

published to date is that on birth defects of the Centers for Disease Control. It furnished no material support for plaintiffs' claims. Because it was first publicly released only a short time ago in The Journal of the American Medical Association, it is too early for critical analysis by medical and statistical experts and others. *See* J.D. Erickson, J. Muliare, P.C. McClain, T.G. Fitch, L.M. James, A.B. McClearn & M.J. Adams, Jr., Vietnam Veterans' Risks for Fathering Babies With Birth Defects, 252 J.A.M.A. 903 (Aug. 17, 1984) (CDC Birth Defect Study). Because it has been condensed and somewhat simplified, the JAMA version rather than the original CDC Birth Defect Study is referred to in the discussion and quotations that follow.

The study covers male-mediated defects only. There are a number of female veterans who are members of the class. A female class member who was stationed in Vietnam and claimed exposure to Agent Orange testified at the Chicago hearing. Her pregnancy was apparently in the third trimester when she left Vietnam. The father, her former husband, was a Vietnam veteran who apparently also was exposed before she conceived. The child, a thirteen year old male, apparently suffered from no birth defects, but has recently required some psychiatric help. So far as this witness knew, hers is the only case of this type. For all practical purposes, therefore, the CDC Birth Defect Study is relevant to the entire class of children. Mutagenesis rather than teratogenesis is our primary concern.

The CDC Birth Defect Study is well summarized and its significance in excluding support for claimed Agent Orange genetic effects is reasonably assessed in an editorial published in JAMA by Bruce B. Dan, M.D., for the American Medical Association. He writes:

Despite the lack of evidence of increased incidence of congenital malformations in children of parents exposed to large doses of TCDD, there has still been concern that birth defects observed in children of men serving in Vietnam might be related to exposure to Agent Orange or to some other chemical during their experiences in Southeast Asia. Because serious birth defects occur in approximately 2% to 3% of all live births, the number of such defects that would be expected to have occurred, to date, in children of Vietnam veterans ranges from 50,000 to 150,000. It is not surprising that a veteran who noted a disturbing skin condition apparently associated with his tenure in Vietnam might question whether a birth defect in his child could also be related to that experience.

How might a chemical exposure be related to congenital malformations? Most birth defects result from the abnormalities of development soon after conception, through either teratogenesis or mutagenesis. For teratogenesis to occur, the exposure to a putative chemical agent would have to occur in utero. While it is possible that an absorbed and retained chemical from previous exposure might be transmitted to an embryo through semen, it is unlikely. It is possible, however, that a chemical mutagen could produce future birth defects by disturbing the father's germ cells.

It is also possible that exposure to a specific infectious agent encountered while in Vietnam could contribute to an increased rate of birth

defects. And while it might not be a *direct* effect of military service, it is conceivable that stress experienced in Vietnam could translate into an unhealthy family milieu with the possibility of inadequate prenatal care, poor nutrition, or abuse of alcohol or other drugs that would adversely affect the pregnancy. Therefore, it is not only important to investigate whether exposure to specific chemical agents could increase the incidence of birth defects, but also whether service in Vietnam alone would have done so. . . .

As with all retrospective views of "experiments of nature," the study has some inherent strengths and weaknesses. . . .

The data set is derived from a large subset of the Metropolitan Atlanta Congenital Defects Program, a registry of birth defects observed during the first year of life. Attributes of parents of babies with defined defects were compared with those of randomly selected babies born without known defects. The case group and control group were matched to race, year, and hospital of birth. Parents of each group were questioned by interviewers who were blinded as to case or control status in order to eliminate possible bias.

Possible confounding by known contributors to birth defects, e.g., maternal age, education, or alcohol consumption, were considered in the lengthy analysis. The investigators were able to evaluate possible birth defect syndromes by considering combinations of two and three defects taken together. They also looked at the effect of

malaria or malaria chemoprophylaxis on birth defects.

Because it is impossible to measure accurately the actual herbicide exposure a veteran may have received, the authors have constructed two indices of possible exposure — a veteran's own estimate of possible exposure and an objective scoring system based on the serviceman's location, occupation, and dates of service in Vietnam. While neither one of these two scales relates the possible contribution of ingestion, inhalation, or skin contact of herbicides, they are probably the best estimates of exposure that can be obtained. Although imprecision in exposure might exist, the estimates do not seem to be distorted by any bias. The consequences of this imprecision in the exposure to TCDD is the reduction in sensitivity in detecting specific birth defects.

The authors are appropriately cautious in the interpretation of their results, but considering the overall strength of the study, the past evidence from human exposure, and the confirming experience of Australian servicemen, it would seem that a fairly strong statement can be made that it is unlikely that serious congenital anomalies in children of men serving in Vietnam were results of that experience. That may be of little consolation to those who have suffered the unfortunate circumstances associated with birth defects. But perhaps it will encourage us to expend more effort in preventing birth defects in any child.

252 J.A.M.A. at 936-37 (footnotes omitted).

Only birth defects diagnosed in the first year of life are covered. CDC Birth Defect Study, *supra,* at 904. At the Fairness Hearings it was apparent that those anomalies revealed shortly after birth were of most concern to the veterans who testified. Some did refer to certain learning and emotional problems that manifest themselves later in childhood, but it would be difficult if not impossible to associate such manifestations with primary effects of herbicide spraying in Vietnam. Those problems may be secondary effects of the emotional and physical problems of the fathers that caused stresses within families.

Overall, there was no significant difference between birth defects of children of Vietnam and non-Vietnam veterans. The Study notes:

> [T]here is no evidence in favor of the position that veterans (excluding Vietnam veterans) have had a different risk for fathering babies with the aggregate of the birth defects studied here. . . . [T]here is no support in these data for the proposition that Vietnam veterans (in general) have been at different risk than other men for fathering babies with the types of birth defects that we studied.

Id. at 907. As to specific defects such as spina bifida, cleft lip or "other Neoplasms", there were some indications of a slightly higher incidence of birth defects with exposed fathers but a slightly lower estimated risk for defects classified as "complex cardiovascular defects." The variations would not seem to be significant in a tort case such as the one before us. This conclusion, however, would be the subject of complex statistical analysis at any trial. *Cf. id.* at 911-12. The basic data is indicated by the following table:

Tests of Hypotheses for Birth Defects Risks *

Defect Group	No. of Cases ‡	Hypotheses†				
		Veteran, Odds Ratio	Vietnam Veteran, Odds Ratio	Self-report Agent Orange Exposure, Odds Ratio	Agent Orange Exposure Opportunity Indices, Regression Coefficients	
					1	2
All case babies	4,815	0.94	0.97	...	0.03	0.04
Multiple defects	1,107	0.93	0.99	1.07	0.03	0.06
Total nervous system defects	663	0.96	0.91	0.78	0.06	0.07
Total eye defects	113	0.71	0.91	0.42	−0.00	−0.02
Total cardiovascular defects	1,012	0.91	0.92	0.97	0.01	0.02
Complex cardiovascular defects	443	0.97	0.69	0.55	−0.07	−0.11
Total respiratory tract defects	35	1.00	0.87	1.08	−0.23	0.06
Total gastrointestinal tract defects	1,008	1.07	0.98	1.09	0.02	0.06
Total sex organ defects	267	0.81	0.92	1.16	0.09	0.02
Total urinary tract defects	214	1.05	0.93	0.21	−0.06	−0.06
Total musculoskeletal defects	1,014	0.90	0.98	1.06	0.01	0.00
Total endocrine defects	44	1.10	0.66	...	−0.13	0.01
Autosomal chromosome defects	257	1.29	0.81	0.75	−0.13	−0.17
Dominant mutations	19	0.62	...	...	...	...
Anencephalus and spina bifida	343	1.13	0.99	1.03	0.08	0.11
Anencephalus	142	0.99	0.89	0.80	−0.07	−0.10
Spina bifida	201	1.25	1.05	1.19	0.16	0.20
Hydrocephalus	68	0.68	0.85	0.25	0.04	0.04
Encephalocele	39	0.59	1.21	...	0.19	0.15
Microcephalus	85	1.37	1.14	2.15	0.15	0.15
Neurofibromatosis	5	0.56	...	...	...	...
Anophthalmia	3	0.16	2.55	...	...	...
Microphthalmos	44	1.08	0.76	...	−0.47	−0.12
Buphthalmos	8	1.86	1.60	...	...	...
Congenital cataract	42	0.79	1.20	...	0.11	−0.21
Coloboma	16	0.75	1.35	3.45	0.24	0.42
Aniridia	3	0.45	...	...	...	...
Anomalies of ear causing impaired hearing	31	1.40	1.54	...	−0.70	−0.81
Conus arteriosus defects	155	0.79	0.81	1.08	−0.10	−0.01
Common truncus	24	0.59	0.67	...	0.10	0.22
Transposition great vessels	91	0.88	0.75	1.49	−0.38	0.07
Tetralogy of Fallot	55	0.89	0.79	0.61	0.02	−1.02
Ventricular septal defect	404	0.87	1.00	1.01	0.05	0.03
Selected ventricular septal defects	322	0.95	0.97	0.98	0.02	−0.07
Atrial septal defect	176	0.82	0.84	0.24	0.05	0.04
Ostium atrioventriculare commune	35	0.87	0.88	0.89	−0.02	−0.01
Anomalies of heart valves	158	1.07	0.71	1.01	0.11	0.07
Fibroelastosis cordis	7	0.98	...	...	...	...
Patent ductus arteriosus	376	0.89	0.81	0.74	−0.11	−0.13
Selected patent ductus arteriosus	333	0.84	0.82	0.69	−0.14	−0.14
Coarctation of aorta	75	1.01	1.26	1.89	0.03	0.05
Other anomalies of aorta	63	1.28	0.59	...	−0.09	−0.06
Stenosis atresia of pulmonary artery	83	0.66	0.53	...	−0.07	−0.04
Anomalies of great veins	39	0.90	0.82	...	−0.08	0.11
Choanal atresia	24	1.04	0.77	1.41	−0.25	0.14
Congenital cystic lung	4	1.47	...	...	...	...
Agenesis of lung	7	0.62	1.66	...	−0.09	−0.03
Cleft palate	117	0.73	0.56	0.76	−0.47	−0.08
Cleft lip without cleft palate	131	1.40	1.10	1.07	0.06	0.16
Pyloric stenosis	317	1.15	0.90	0.60	0.00	0.00
Tracheoesophageal fistula, esophageal atresia, and stenosis	52	1.11	1.16	0.89	0.14	0.22
Atresia and stenosis of small intestine	74	0.77	0.81	0.71	−0.60	−0.27
Atresia and stenosis of rectum and anal canal	89	1.36	0.89	1.09	−0.03	−0.05
Hirschsprung's disease	39	0.77	1.12	2.43	0.09	−0.05
Anomalies of intestinal fixation	41	1.49	0.99	3.11	0.17	0.22

Tests of Hypotheses for Birth Defects Risks * (Cont)

Defect Group	No. of Cases‡	Hypotheses†				
		Veteran, Odds Ratio	Vietnam Veteran, Odds Ratio	Self-report Agent Orange Exposure, Odds Ratio	Agent Orange Exposure Opportunity Indices, Regression Coefficients	
					1	2
Anomalies of gallbladder, bile ducts, and liver	20	0.51	2.05	1.91	0.16	−0.28
Anomalies of pancreas	8	0.49	...	...	...	...
Indeterminate sex	5	2.26	...	...	...	...
Hypospadias	583	0.83	0.76	0.99	0.03	−0.04
Epispadias	17	0.60	1.30	...	...	...
Anomalies of ovary, fallopian tubes, and uterus	16	0.83	0.93	2.13	0.03	−0.00
Anomalies of vagina and external female genitalia	40	0.82	1.10	0.94	0.13	−0.02
Pseudohermaphroditism	28	0.93	0.79	...	−0.07	0.09
Renal agenesis	60	1.11	0.74	...	−0.27	−1.00
Cystic kidney disease	50	0.75	0.23	...	−0.83	−0.52
Urinary tract obstructive defects	86	0.88	1.22	0.50	0.06	−0.05
Exstrophy of urinary bladder	9	2.58	1.42	...	−0.23	0.25
Atresia stenosis of urethra and bladder neck	49	1.42	0.95	...	−0.06	0.00
Clubfoot	849	0.90	1.02	1.19	−0.00	0.01
Selected clubfoot	547	0.88	0.99	1.25	−0.02	0.01
Reduction deformity	157	1.02	1.03	1.13	0.11	0.05
Generalized flexion contracture of limb joints	21	1.11	2.93	1.53	0.16	0.32
Chondrodystrophy	14	0.47	...	...	...	...
Osteogenesis imperfecta	7	0.89	...	...	...	...
Hereditary edema of the legs	3	...	...	...	...	...
Specified anomalies of hair	13	0.64	2.01	8.69	0.45	...
Specified anomalies of nails	15	2.14	4.22	...	0.33	0.46
Anomalies of spleen	41	1.22	0.56	...	0.04	−0.12
Anomalies of adrenal gland	6	0.75	...	...	...	...
Anomalies of thyroid gland	25	0.80	0.74	...	0.02	0.14
Anomalies of other endocrine glands	14	1.89	0.66	...	...	−0.27
Situs inversus	13	0.61	2.52	...	0.54	0.50
Conjoined twins	4	0.41	...	...	...	...
Other forms of monster	5	0.95	...	...	...	...
Down's Syndrome	212	1.30	0.95	0.73	−0.08	−0.12
Other syndromes caused by autosomal abnormality	45	1.27	0.22	0.86	−0.81	−0.94
Tuberous sclerosis	1	...	...	...	...	...
Other specified syndromes	20	0.52	2.01	0.69	0.09	0.16
Potter's syndrome	43	0.68	0.63	...	−0.20	...
Multiple congenital anomalies, unspecified	3	3.76	...	...	...	...
Diaphragmatic hernia	74	1.41	0.69	0.47	−0.18	−0.84
Omphalocele and gastroschisis	108	0.84	1.41	1.51	0.15	0.15
Other neoplasms	87	0.83	1.80	1.50	0.14	0.26
Cytomegalovirus	10	1.67	1.25	...	...	...
Herpes simplex	10	1.54	4.02	...	0.15	0.31
Syphilis	7	0.57	...	...	...	...

* Significant odds ratios or regression coefficients ($P < .05$) are underlined. Ellipses indicate that test was not done because there were no exposed cases and/or exposed controls. "All case babies" test was not done because it was considered inappropriate (see text).

† Veteran hypothesis, estimated relative risk (odds ratio) for veteran fathers (excludes Vietnam veterans), if significant, and odds ratio was less that 0.83 or greater that 1.2. data for remaining hypotheses limited to families with veteran fathers. Vietnam veteran hypothesis, estimated relative risk (odds ratio) for Vietnam veteran fathers. Self-report Agent Orange exposure, estimated relative risk (odds ratio) for self-reported exposure to Agent Orange. Agent Orange exposure-opportunity indices, logistic regression coefficient for association between birth defects risk and index scores. Index 1 derived from information in military records. Index 2 based on information obtained from fathers' interviews.

‡ Number of case-group families contributing to analysis of Vietnam veteran hypothesis.

As with most statistical studies of this kind, it cannot be proven conclusively that a particular child's birth defect was or was not "caused" (in a tort law sense) by the father's exposure to Agent Orange. Nonetheless, the data to date does not support any claim of birth defect sufficient to allow a jury finding in favor of a member of the class. Since plaintiffs would have the burden of proof at a trial, the "weakness" of any statistical data would tend to favor defendants' position. In medical-statistical terms the position is stated as follows:

> The most important conclusion to be drawn from this study is that the data collected contain no evidence to support the position that Vietnam veterans have had a greater risk than other men for fathering babies with all types of serious structural birth defects combined. . . .
>
> This study cannot prove that some factor associated with service in Vietnam was or was not associated with the occurrence of rare types of defects, of defects in the babies of selected persons, or of defects in the babies of small groups of veterans. However, the conclusion that Vietnam veterans in general have not fathered babies with all types of birth defects combined, at higher rates than other men is based on relatively strong evidence. This study has not identified the causes of the birth defects that have occurred in the babies of Vietnam veterans, nor in the babies of men who did not serve in Vietnam. The causes of the vast majority of birth defects remain unknown. . . .
>
> In addition this study does not provide support to the notion that those men who may have been exposed to Agent Orange in Vietnam have had an increased risk of fathering babies with most

> types of defects. The conclusion regarding the lack of increased risks associated with Agent Orange is based on considerably weaker evidence than the conclusion about Vietnam veterans in general. . . .
>
> The data on some of the exposures of interest had to be collected from parents, not from some external source. In most case-control studies, there is fear that members of the case and control groups will not give exposure histories with equal accuracy, thereby introducing bias into the case-control comparison. For the main exposure in this study, paternal military service in Vietnam, we believe that there is little reason for concern about the accuracy of information reported by either parents in the case or control group. . . .
>
> The validity of the Agent Orange EOI [Exposure Opportuity Index] is uncertain and will probably remain so.

Id. at 910.

An extensive birth defect study of Australian veterans, who are members of the class, is also discussed in the CDC Birth Defect Study. It showed "no increased risk of all types of structural birth defects." *Id.* at 911; see J.W. Donovan, R. MacLennan & M. Adena, Vietnam Service and the Risk of Congenital Anomalies, 140 Med.J.Aust. 394 (1984) (no evidence that Army service in Vietnam increases risk of fathering children with anomalies). *See also* A.H. Smith, D.O. Fisher, N. Pearce & C.J. Chapman, Congenital Defects and Miscarriages Among New Zealand 2,4,5-T Sprayers, 37 Archives of Envtl. Health 197 (July/August 1982) (no reproductive effects).

Summarizing their results, the authors of the CDC Birth Defect Study acknowledge that it cannot be deemed con-

clusive even though it is "strong evidence" of lack of Agent Orange causation.

> Although the present study was large, the estimates of Agent Orange exposure that had to be used were probably rather inaccurate. Therefore, the conclusions regarding possible Agent Orange-associated risks for Vietnam veterans that can be drawn from this study are weak. Even so, this study provides strong evidence that Vietnam veterans in general are not at increased risk. This suggests that if there is any increased risk related to exposure to Agent Orange, either the risk must be small, must be limited to select group of Vietnam veterans, or the increased risk must be limited to specific types of defects.

CDC Birth Defect Study, *supra,* at 912.

This conclusion of lack of reliability of inferences with regard to a connection between Agent Orange exposure and birth defects is supported by the testimony of Michael Gough and Helen Gelband, Office of Technology Assessment of the United States Congress, before the Subcommittee on Hospitals and Health Care of the House Committeee on Veteran's Affairs in their review of the Centers for Disease Control Study "Vietnam Veterans' Risks for Fathering Babies with Birth Defects," October 3, 1984, concluding:

> The validity or lack of validity of the Agent Orange Exposure Opportunity Indices does not in any way affect the conclusions about associations of birth defects with *Vietnam service.* If the indices are invalid, however, the *Agent Orange* analyses provide no reliable information either to rule out associations with Agent Orange or to confirm them.

Manuscript at p. 10 (emphasis is in original).

Other literature on herbicides and their effects, particularly the various published studies concerning Agent Orange issues, also do not support plaintiffs' position. *See, e.g.*, Centers for Disease Control, Protocol for Epidemiologic Studies of the Health of Vietnam Veterans, 63-77 (November 1983) (CDC Protocol). The conclusion of the CDC Protocol accurately indicates that none of the studies to date are reliable for our purposes.

> In summary, many health studies have been conducted on veteran populations, but because of the lack of control groups, the selection of control groups from among veterans who were not classifed as to their combat experience and the selection of study subjects from specific military occupational specialties, the studies are not useful for evaluating the overall effect of war service. CDC's review of this literature revealed little which could be used to generate specific hypotheses about health effects on military service in the Vietnam war.

Id. at 77.

A number of independent reviews of literature were prepared at the request of the VA. One by Clement Associates, Inc. is entitled *Review of Literature on Herbicides, Including Phenoxy Herbicides and Associated Dioxins* Vol. III (1984) (Clement Report). The Clement report analyzes 450 documents made available since mid-1981, *id.* at II-1, suggesting intense interest in the subject. But as the report indicates, many of these studies have inherent limitations and "many potentially informative studies are either still in progress or have not been published." *Id.* The Clement conclusion is that "All of the human studies available to date have been inadequate in design and/or sensitivity," for purposes of this case. *Id.* at II-10.

An additional two volume analysis of literature was prepared independently by J.R.B. Associates, Inc. for the VA. *See Review of Literature on Herbicides and Associated Dioxins* Vols. I & II (1981) (JRB Report). The JRB Report extensively summarizes "gaps in information." *Id.* Vol. 1, at 1-6 to 1-15. It recommends more study to answer questions worrying Vietnam veterans. *Id.* at 1-14.

Various symposia and many other studies leave the reader with the conclusion that *there may be* some causal connection between Agent Orange exposure and present diseases. *See, e.g.*, R.E. Tucker, A.L. Young & A.P. Gray, *Human and Environmental Risks of Chlorinated Dioxins and Related Compounds* (1983), reporting on an international symposium held at Arlington, Virginia in October of 1981 (the Arlington Studies). The distinguished panel in "Human Observations" of the Arlington Studies concluded that probably the best indication of toxic exposure we have is chloracne. It stated:

> The skin lesion, chloracne, is an important indicator of exposure to TCDD . . . and is probably the most sensitive indicator of exposure.

Id. at 795. As already noted in section III, B, *supra*, there are very few diagnosed cases of chloracne known to the Veterans Administration.

Significantly, the Arlington Studies panel concludes that, "there is no evidence that TCDD is a teratogen in humans." Arlington Studies, *supra*, at 795. Moreover, "chromosome aberrations have not been observed in people exposed to TCDD." *Id.* at 796. This suggestion that the claim of birth defects is unfounded is supported by the study conducted by R.R. Cook and K.M. Bodner. *Id.* at 593.

No evidence has been found in the literature suggesting that either in humans or animals, exposure of the male results in birth defects. *See* Clement Report, *supra,* IV-41ff. Even the studies of the industrial explosion at Seveso, Italy in 1976, which apparently released several pounds of dioxin in over a small area, show no pattern of abnormalities in the children. A. Hay, *The Chemical Scythe* 216-17 (1982). Since mothers as well as fathers were exposed in Seveso and since the scientific data is questionable, *id.* at 216-18, this incident does not support any finding of male mediated fetus abnormalities. *Id.* at 36-40, 168-69; *see* Clement Study, *supra,* at IV-174 to IV-186. The birth defect study released recently by the Centers for Disease Control in Atlanta reinforces this conclusion. Whether a satisfactory study in humans is ever possible that will definitively resolve the Agent Orange problem as it affects birth defects is doubtful. *Id.* at IV-186.

In sum, then, the result of an enormous scientific effort to be helpful on causation has, from the plaintiffs' point of view, left the case at best open. This is not sufficient to support a recovery in tort law even though it may suffice to permit regulation of products that might contain dioxin or support a public policy decision to use public funds to compensate exposed Vietnam veterans or their children with medical problems.

Many of those who testified at the Fairness Hearings were of the opinion that further studies and a full trial would reveal more evidence supporting their causality claims. Defendants' predictions are to the contrary. It is, of course, possible that in a few years a sudden increase in diseases associated with Agent Orange will be revealed. (It took almost forty years for solid tissue cancers to develop in victims of atomic bombing in Japan.) But based on pre-

sent data it appears unlikely that such proof will develop in time to affect this litigation. Current scientific controversy about the relative effects of natural carcinogens, man-made carcinogens such as toxic chemicals, diet, smoking and good health care make any legal predictions foolhardy. *See, eg.*, B.N. Ames, Dietary Carcinogens and Anticarcinogens, 221 Science 1256 (1983) (natural foods and other non man-made materials can present far greater risks of cancer than toxic chemicals in non-occupational situations); *but see* letters supporting and opposing the Ames view in 224 Science 659ff (1984) (note particularly the dissent and emphasis on carcinogenic effects of pesticides by S.E. Epstein and J.B. Schwartz). In conclusion, all that can be said is that persuasive evidence of causality has not been produced.

D. Knowledge of Government and Defendants

As indicated in IV, C, Nature of Liability and Relation to Defense of Government Knowledge, *infra*, if the defendants can show that the government knew as much as they (the defendants) should have known about the dangers of Agent Orange, they have a complete defense. This court previously decided there is substantial evidence to support that defense. *In re "Agent Orange" Product Liability Litigation*, 565 F.Supp. 1263, 1266-74 (E.D.N.Y. 1983). The court canvassed the evidence then available and concluded:

> Even when all doubts are resolved in favor of the plaintiffs . . . . the record demonstrates that the government and the military had a considerable amount of knowledge about 2,4,5-T, about dioxin, and about the health hazards associated with both.

Id. at 1266.

Since the summary was written in June 1983 substantial additional evidence supporting the defendants' position has been assembled through extensive discovery. This evidence strongly suggest that many in the government were aware of possible dangers in the herbicide spraying program.

Knowledge was spread horizontally throughout various government agencies. Plaintiffs argue that much of this knowledge never reached the highest levels of those agencies concerned with the manufacture or use of Agent Orange. The legal question is when, where, and to what level does "knowledge" of a fact need to rise before it can be imputed to the "government" for purposes of the government contract defense.

Plaintiffs argue that because of the complex nature of the United States government, knowledge on the part of employees within various agencies, particularly at the lower echelons, cannot be imputed to the White House or the Secretary of Defense. Their position appears to be an overstatement of the knowledge requirement. Neither the Secretary of Defense nor the President are "the government." Widespread knowledge among lower echelons can be attributed to the Executive.

Under principles of agency law, knowledge in the possession of an agent – here a government employee – who has a duty to transmit or receive the information is knowledge in the possession of the principal – here the United States or an appropriate agency. As the Restatement (Second) of Agency § 272 puts it:

> [T]he liability of a principal is affected by the

> knowledge of an agent concerning a matter as to which he acts within his power to bind the principal or upon which it is his duty to give the principal information.

See also Restatement of Agency § 275 ("principal is affected by . . . knowledge which an agent has a duty to disclose to the principal or to another agent of the principal to the same extent as if the principal had the information"); *id.* § 277 (principal not affected by knowledge that agent should have but did not acquire). Under the agency law standard, the fact that information did not get to a person with final decision-making authority would not be material.

The case law on imputation of knowledge within the government is consistent with the Restatement standard. Thus, the knowledge of employees of one agency may be imputed to those of another if there is some relationship betwen the agencies – either some reason for the agency without knowledge to seek the information or a reason for the knowledgeable agency to transmit the information. *See, e.g., J.A. Jones Construction Co. v. United States,* 390 F.2d 886, 182 Ct.Cl. 615 (1968) (in contract action for premium wages, the necessity of which was caused by action of one agency, knowledge imputed to contracting agency because knowledgeable agency was acting as its agent and sharing information). *See also United States v. Currency Totalling $48,318.08,* 609 F.2d 210, 215 (5th Cir.1980) (knowledge of customs agent not attributed to government since claimant could not prove agent had duty to reveal knowledge). Some relationship is required: "a truly independent federal agency should not be charged with knowledge of what another is doing simply because both are components of the same federal government."

J.A. Jones Construction Co., 390 F.2d at 891.

As will be seen in the next few pages where the government's knowledge is outlined, it is clear that the relationship between those in possession of the relevant knowledge and those in a position to decide the fate and direction of the herbicide program was much more than that of "simply [different] components of the federal government." *Id.* Certainly where the failure to transmit the knowledge can create serious dangers, it is appropriate to charge the United States with the knowledge of any responsible employees who could reasonably be expected to alert the government. *See, e.g., Pina v. Henderson,* 586 F.Supp. 1452, 1456-57 (E.D.N.Y.1984) (citing cases on charging the government with information for *Brady* purposes regardless of whether the prosecutor had the information if another government agent had information). *Cf.* Federal Tort Claims Act cases applying state law; *Emelwon, Inc. v. United States,* 391 F.2d 9 (5th Cir.) (liability for spraying by independent contractor where employee of government knew of dangerous condition), *cert. denied,* 393 U.S. 841, 89 S.Ct. 119, 21 L.Ed.2d 111 (1968); *Barron v. United States,* 473 F.Supp. 1077 (D.Hawaii 1979), *aff'd,* 654 F.2d 644 (9th Cir.1981) (knowledge of some government employees that contractor had failed to comply with contract); *Schwartz v. United States,* 230 F.Supp. 536, 539-40 (E.D.Pa.1964) (doctor in malpractice action).

Were the issue submitted to a jury, as it almost certainly would have been, it would be necessary to refine further the definition of what constitutes knowledge on the part of the government. For now it is sufficient to say that the evidence briefly sampled below based upon plaintiff's fairness brief indicates that defendants would have been able to make out a prima facie case whatever the precise test.

(Quotations from depositions come from plaintiffs' brief.)

One of the governmental entities with knowledge of potential hazards of Agent Orange use was the President's Science Advisory Committee ("PSAC"). PSAC was an organization within the White House during the 1960's that provided advice to the President on a "wide variety of national and military problems." During the 1960's PSAC was composed of 18 scientists appointed by the President for four-year terms. "One of the major roles of the PSAC was . . . advice to the military." PSAC was assisted by the Office of Science and Technology and chaired by the President's Science Advisor.

Representatives of the Army Chemical Corps briefed PSAC on the "Possible Health Hazards of Phenoxyacetates As Related To Defoliation Operations In Vietnam" on May 9, 1963. Moreover, PSAC was intimately involved with the preparation and distribution in 1963 of a report on "Use of Pesticides" raising serious safety problems; this report was referred to the Joint Chiefs of Staff for review by the Secretary of Defense. The significance of the Army's knowledge is reflected in the fact that as early as 1952, personnel at Edgewood Arsenal learned from Monsanto Chemical Company of toxic byproducts of 2,4, 5-T production in connection with Edgewood's search for chemicals with possible military applications. In June of 1952, the Army Chemical Center at Edgewood Arsenal acquired information on the 1949 accident at Monsanto's TCP plant in Nitro, West Virginia, from the chief of the Pharmacology Divison of the Food and Drug Administration. This information was the subject of a discussion at the Thirty-Sixth meeting of the Advisory Committee on New CW (chemical warfare) held on August 8, 1952 at at the Chemical Corps Medical Laboratory. Edgewood

scientists were aware of dioxin compounds even before a representative of the Army's Chemical Corps Research and Development command was sent to Europe in 1959 where he obtained "startling" information regarding the toxicity of dioxin. *See In re "Agent Orange" Product Liability Litigation,* 565 F.Supp. 1263, 1266 (E.D.N.Y. 1983).

One member of PSAC testified that sometime in 1965 he became aware that herbicides or defoliants were being used in Vietnam; that one of the constituents of the herbicide Agent Orange was 2,4,5-T; that between March and July of 1965 he became aware that a contaminant called "dioxin" was in the 2,4,5-T; that he was aware that dioxin was toxic; that all of these matters were discussed within a subgroup of PSAC concerned with Biological and Chemical Warfare (the "BWCW" panel); that some specific human health effects were discussed but that he could not remember which specific ones; and that the question of human health hazards associated with the presence of dioxin in 2,4,5-T was discussed within the full committee of PSAC sometime between April and June of 1965.

Other witnesses confirmed the view that PSAC was alerted to the possible health hazards of Agent Orange before the msot intensive spraying was started. One member of PSAC testified that he did not transmit his information to President Johnson because he personally did not believe at the time that there was a threat of serious health effects.

Other government officials also had knowledge of potential health problems from exposure to the herbicides. In 1964 a scientist in the Public Health Service in Cincinati, Ohio, was instructed to determine whether there was a contaminant in the 2,4,5-T that could cause "chlo-

racne and liver damage." He wrote to several of the defendants, including Hercules and Dow, requesting samples of their 2,4,5-T for purposes of undertaking a study to determine if 2,4,5-T could be linked to chloracne and liver damage. He found what he suspected to be chloracne and liver damages after examining rabbit tissue, but he could not definitely assess whether it was caused by the applied chemicals. On the basis of his studies and the published literature, he submitted an application in January 1965 for research which was to begin February 1, 1965, for continued study of 2,4,5-T. In the proposal he stated:

> The herbicide 2,4,5-T is produced and widely used in large quantities and several cases of illness have resulted from contact with the compound. If the toxic compound is not 2,4,5-T but some other contaminant, then the manufacturing process might be altered in some way to eliminate the hazardous compound.

By 1967, the government began to be concerned with the availability of sufficient quantities of Agent Orange, particularly 2,4,5-T, to keep up with the military spraying demands in Vietnam. It began considering construction of a 2,4,5-T plant at Weldon Spring. Deposition testimony confirms that the Weldon Spring project was both initiated and reviewed at the highest levels of the Defense Department. The Assistant Secretary of Defense, Installation & Logistics ("I & L"), from May to December 1966, who was Deputy Assistant Secretary (Materiel) in the Office of the Assistant Secretary of Defense, I & L from from December 1966 to June 1970, briefed the Secretary of Defense daily on material requirements, including herbicide needs. Such high level review of herbicide requirements is not surprising since herbicides were recognized as an important component of the government's munitions

arsenal for Southeast Asia and their significance to the war effort was confirmed at a meeting with General Westmoreland and his staff. The decision to proceed with an in-house facility was made by the Secretary of Defense, acting upon the recommendation of I & L.

Early in 1968 an Army chemical engineer assigned to Edgewood Arsenal's Weapons Development & Engineering Lab, circulated a memorandum dated February 20, 1968 to the "EA staff at WSCP" (Weldon Spring Chemical Plant) specifically addressed to the subject of dioxin in order "to supply [the recipients] with as much information about the stated subject as possible." The memo diagrams the structure of 2,3,7,8-TCDD, explains how and where dioxin is formed in the 2,4,5-T process and discusses its potential toxicity.

The government's awareness of the potential health hazard posed by dioxin is also evidenced by the numerous references to that compound in the Safety Manual for the Weldon Spring plant recently produced by the government. Dioxin is cited six times in the introduction to the manual. Moreover, section 8 of the manual, entitled "DIOXIN," is devoted entirely to safety considerations arising from dioxin exposure. That section opens with the following comment:

> Dioxin (2,3,7,8-Tetrachlorodibenzo-P-Dioxin) is a very dangerous chemical and should be avoided at all times. This material is the main cause of chloracne, liver, and kidney damage. Dioxin has been found to kill rabbits by feeding them amounts as low as 0.00005 grams per kilogram of body weight. Chloracne has been produced on a rabbit's ear by repeated application at a concentration of less than one PPM. Although oper-

> ating temperatures are controlled to prevent this formation, Dioxin may be present in the process steps for the production of the sodium salt of 2,4,5-Tri-chlorophenol in the autoclave, methanol still, and anisole still area. Trace amounts may be evident downstream as far down as the esterification segment of the process.

The section goes on to prescribe protective clothing and equipment and first aid procedures in connection with dioxin exposure.

Among the other departments whose responsible officials had knowledge of safety problems in the production and use of herbicides were the United States Public Health Service at least as early as 1967; the Centers for Disease Control through its studies in the early 1960's of Silvex, composed of 2,4,5-T, revealing adverse health effects; the Department of Agriculture whose records relating to registrations and warnings under the Federal Insecticide, Rodenticide and Fungicide Act refer to animal studies and potential human health problems from contact with herbicides in the 1960's; the Department of Commerce which had been informed by Dow of chloracne and systemic disorders involved in its production of 2,4,5-T in the mid-1960's; and the National Academy of Science which in 1968 issued a statement raising many unanswered questions about the adverse effects of herbicides in Vietnam.

Typical of the warnings the Department of Agriculture approved for use on herbicides containing 2,4,5-T in the 1960's was that on "Bushwhack," manufactured and sold domestically by Hercules. Uses were instructed not to contaminate any body of water; not to graze dairy animals in treated areas within seven days after application; not to contaminate feed or foodstuffs; that the product may

cause "skin irritation;" that human beings should "avoid inhaling spray mist;" "that it should not be taken internally;" that all human beings should avoid contact of the product "with the eyes, skin, or clothing" and that in case of such contact should "get prompt medical attention."

In light of this and much other evidence, it is apparent that the government contract defense in this case is powerful. If, as appears not unlikely, the information necessary for an informed decision on Agent Orange was readily available to the government while it was ordering and using this herbicide, plaintiffs could not succeed in their suit. This factor provides a strong reason for settlement.

IV. LEGAL PROBLEMS WITH CLAIMS

There are enormous legal problems that plaintiffs would have to overcome before they could succeed in obtaining relief from the courts. Some of these problems were covered in the extensive opinion certifying plaintiffs as a class. *In re "Agent Orange" Product Liability Litigation,* 100 F.R.D. 718 (E.D.N.Y. 1983), certification for interlocutory appeal denied, 100 F.R.D. 735 (E.D.N.Y. 1983), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). Other issues were discussed in connection with the most recent opinion on government liability in view of the *Feres* restrictions on government liability. 580 F.Supp. 1242 (E.D.N.Y.1984), *mandamus denied,* 733 F.2d 10 (2d Cir.), appeal dismissed, 745 F.2d 161 (2d Cir.1984). Still others were covered in connection with the analysis of the general conflict of laws problems. 580 F.Supp. 690 (E.D.N.Y. 1984). The reader is respectfully referred to these published opinions for elaboration. We have not discussed the possible government contract defense as it relates to the standard of liability. See the full discussion in Note, Lia-

bility of a Manufacturer for Products Defectively Designed by the Government, 23 B.C.L. Rev. 1023 (1982).

Set forth below is a discussion of some of the serious legal hurdles that plaintiffs would have to surmount in connection with the statues of limitations, A, *infra,* the inability to prove that a particular plaintiff was injured by a particular defendant, B, *infra,* and the substantive standard of liability and its relationship to the defense of government knowledge, C, *infra.*

These discussions of the law are necessarily arcane, complex and difficult for the nonlawyer to follow. The case is so unprecedented, however, that it is necesssary to explore fundamental concepts to provide useful analogies. In such circumstances, it seems wise to err on the side of caution by fully exploring the issues.

A. Statutes of Limitations

1. Introduction

The primary statutes of limitations issue is whether a single bar period should apply to all members of the class or whether each of the groups – servicepersons, wives and children – need to be treated separately and, in turn, subdivided among the various jurisdictions where they reside and where critical events occurred. More than one hundred and fifty subclasses, covering each of the states and foreign countries, might be involved. Each jurisdiction has separate statutory limitations periods, points in time from which the statute is measured (such as time of exposure to the toxic substance or time of manifestation of the disease) and tolling provisions and caselaw glosses applicable to the servicepeople, spouses and minor children. Complex subsidiary problems of "when" and "where" the service-

person's injury took place, "when" and "where" manifestations "were" or "should have been" noted by the individual claimant, and what actions by defendants may have operated to toll the statute because of alleged "coverup" of information or other reasons would all need to be considered.

The unfairness of allowing some claims while denying others for reasons having nothing to do with the merits is obvious when all the claims arose out of a war in which the servicepersons were comrades in arms. A number of theories permit escape from this difficulty but each is subject to serious objection and requires finding "new" law applicable to this unique case with the possibility of appeal and reversal.

In the discussion that follows we consider first the standard approach to statutes of limitations, which would require application of the law of each of many jurisdictions. We then turn to a number of possible approaches applying a single limitations period to all class members. They include the single time-bar period based upon federal or national consensus law, a single time-bar period based upon the fact that this is a class action, and a single time-bar period for American Veterans based upon an interpretation of a New York State statute.

2. Standard Multijurisdictional Approach

Were this a simple two-party tort case, the federal court would look to the statutes of limitations of the state in which it sits – here, New York (where the original MDL case was brought). If New York under its statutes would then look to the law of another state – as it would were a non-New York resident suing – then so too would the federal court. *See, e.g., Guaranty Trust Co. v. York*, 326

U.S. 99, 65 S.Ct. 1464, 89 L.Ed. 2079 (1945); N.Y. C.P.L.R. § 202 (nonresident plaintiff suing in New York subject to shorter of New York statute or that of jurisdiction where cause of action arose); *Sack v. Low,* 478 F.2d 30 (2d Cir. 1973) (interpreting New York statute as looking to place where injury suffered). *Cf. Arneli v. Ramsey,* 550 F.2d 774 (2d Cir.1977); *Stafford v. International Harvester Co.,* 668 F.2d 142 (2d Cir.1981). Using this traditional approach looking to the law of other states, many veterans' claims would be barred by the statute of the state in which they reside. *See* Appendix E, *infra.*

a. CPLR 202

In this case — assuming that the Special Agent Orange statute does not cover non-New York residents, see discussion *infra — Erie R. Co. v. Tompkins,* 304 U.S. 64, 58 S.Ct. 817, 82 L.Ed. 1188 (1938), and *Klaxon Co. v. Stentor Elec. Manufacturing Co.,* 313 U.S. 487, 61 S.Ct. 1020, 85 L.ED. 1477 (1941), require the court to look to the New York borrowing statute, CPLR 202, in order to determine the applicabble statute of limitations.

CPLR 202 is frankly designed as a statutory exception favoring "residents" of New York. *United States Fidelity & Guaranty Co. v. E.W. Smith Co.,* 46 N.Y.2d 498, 504, 414 N.Y.S.2d 672, 675, 387 N.E.2d 604, 607 (1979). Under the statute the claim must accrue (1) in favor of the nonresident, and (2) "without the state." *Martin v. Julius Dierck Equipment Co.,* 43 N.Y.2d 583, 403 N.Y.S.2d 185, 374 N.E.2d 97 (1978); O.G. Chase, Civil Litigation in New York 317 (1983); D.D. Siegel, New York Practice § 57 (1978). This form of parochialism is reflected in the statutes of most states. O.G. Chase, Civil Litigation in

New York 317 (1983). CPLR 202 explicitly tells nonresident plaintiffs that their own state's shorter period applies to them. It reads:

> An action based upon a cause of action accruing without the state cannot be commenced after the expiration of the time limited by the laws of either the state or the place without the state where the cause of action accrued, except that where the cause of action accrued in favor of a resident of the state the time limited by the laws of the state shall apply.

Section 202 requires application of the shorter statutory period of either New York or the place where the nonresident's cause of action accrued. Where CPLR 202 causes another state's statute to be borrowed, that state's statute and the interpretations given its tolling and other provisions will be applied as a total package. *Knieriemen v. Bache Halsey Stuart Shields, Inc.*, 74 A.D.2d 290, 427 N.Y.S.2d 10 (1st Dept.), *appeal dismissed*, 50 N.Y.2d 1021, 431 N.Y.S.2d 812, 410 N.E.2d 745, *appeal dismissed*, 51 N.Y.2d 970, 435 N.Y.S.2d 720, 416 N.E.2d 1055 (1980); *Martin v. Julius Dierck Equipment Co.*, 43 N.Y.2d 583, 403 N.Y.S.2d 185, 374 N.E.2d 97 (1978).

The underlying reason for CPLR 202 is to give New York resident-defendants protection from suits in New York that would have been barred by shorter statutory periods in other jurisdictions where nonresident plaintiffs could have brought suit. *Sack v. Low*, 478 F.2d 360, 367 (2d Cir.1973). Since statutes of limitations are usually characterized as procedural by the states (i.e., for non-*Erie* purposes), so that the law of the forum is applied regardless of its contacts with the transaction, a plaintiff is nor-

mally afforded considerable latitude in choice of law. If he can serve a defendant in a jurisdiction with a favorable limitations statute he can obtain the benefits of that statute without satisfying any requirements as to the forum state's contacts with the transaction. CPLR 202 prevents such forum shopping – at least by nonresident plaintiffs – by applying the bar of the statute of limitations of the state in which the cause of action acrued. In this respect the section is similar in purpose to certain conflict of laws rules that, on matters of "substance," apply the law of the foreign state having appropriate contacts with the transactions rather than the law of the forum in order to achieve uniformity, avoid forum shopping, and lessen court congestion. *Daigle v. Leavitt,* 54 Misc.2d 651, 283 N.Y.S.2d 328 (Sup.Ct.1967); Report of N.Y. Law Revision Commission 146 (1943); 1 H.L. Korn, et al., New York Civil Practice, para. 202.01 (1983); Comment, Choice of Law and the New York Borrowing Statute; A Conflict of Rationales, 35 Alb.L.Rev. 754, 766-767 (1971); Comment, Statute of Limitations and the Conflict of Laws, 28 Yale L.J. 492 (1919).

Where a cause of action accrues in favor of a New York resident, a New York court will apply its own statutory limitation regardless of where the cause of action arose. *Babcock v. Jackson,* 12 N.Y.2d 473, 240 N.Y.S.2d 743, 191 N.E.2d 279 (1963); *Arneil v. Ramsey,* 414 F.Supp. 334 (S.D.N.Y.1976), *aff'd,* 550 F.2d 774 (2d Cir.1977).

The pivotal CPLR 202 factor in the instant case is determining where the cause of action arose for the purposes of the statute. The New York Court of Appeals has furnished little guidance. With reference to tort actions generally, the Court of Appeals in *Babcock v. Jackson,* 12 N.Y.2d

473, 240 N.Y.S.2d 743, 191 N.E.2d 279 (1963) (New York residents injured in an automobile accident in Ontario, Canada), declined to follow the traditional conflicts rule that the law of the place where the tort occurred controls and adopted the "grouping of contacts" doctrine. This doctrine gives "controlling effect to the law of the jurisdiction which, because of its relationship or contact with the occurrence or the parties, has the greatest concern with the specific issue[s] raised in the litigation." *Id.* at 481, 240 N.Y.S.2d at 749, 191 N.E.2d at 283. *See generally* Korn, The Choice-of-Law Revolution: A Critique, 83 Colum L.Rev. 772 (1983), discussed in this court's conflicts opinion, *In re "Agent Orange" Product Liability Litigation,* 580 F.Supp. 690 (E.D.N.Y.1984). Both litigants in *Babcock* were residents of New York so the borrowing statute was not implicated.

The New York Appellate Division has only tangentially addressed the issue of where a cause of action arises for borrowing statute purposes. In *Myers v. Dunlop Tire & Rubber Corp.,* 40 A.D.2d 599, 335 N.Y.S.2d 961 (1st Dept.1972), where a tire manufactured in New York exploded in Kentucky injuring plaintiff attempting to mount it on a car, the court ruled that with respect to a negligence claim, for the purposes of applying CPLR 202, the cause of action arises at the place where the injury occurred. On a second issue the court found that a breach of warranty claim arises where the product is manufactured.

Martin v. Julius Dierck Equipment Co., 52 A.D.2d 463, 384 N.Y.S.2d 479 (2d Dept. 1976), *aff'd,* 43 N.Y.2d 583, 403 N.Y.S.2d 185, 374 N.E.2d 97 (1978), took a somewhat more sophisticated view of the problem on the issue of whether a warranty cause of action accrues separately from strict liability and negligence causes of action. A forklift truck defectively manufactured in New York was shipped

to Virginia where the injury occurred. The court departed from the traditional rule by applying the "grouping of contacts" approach to determine where the cause of action accrued. It reasoned that it must first

> ascertain the underlying nature of plaintiff's action, and then decide which area or locality has the primary interest in the matters in dispute. . . . [T]he test requires [the court] to determine what the essence of the action is and which jurisdiction has the most significant contacts with the issues before the court.

52 A.D.2d at 466, 384 N.Y.S.2d at 482. Under this analysis, the cause of action for breach of warranty and negligence purposes was held to have accrued in Virginia whose statute of limitations was applied pursuant to CPLR 202. The Court of Appeals in *Martin* took a simpler approach, applying Virginia law because that is where the plaintiff was hurt. 43 N.Y.2d at 591, 403 N.Y.S.2d at 189, 374 N.E.2d at 101.

In the absence of state case law directly on point, the Second Circuit, estimating what New York's highest court would rule, has embraced the traditional doctrine that the place of injury determines where a cause of action accrues. *Sack v. Low*, 478 F.2d 360 (2d Cir.1973).

Professor Siegel has concluded from these cases that section CPLR 202 will be construed to bar the nonresident's claim if on almost any theory the place of occurrence can be placed outside the state, provided the defendant is amenable to suit there. He writes:

> In this writer's view the action should be barred if it is shown to be barred by the law of any foreign jurisdiction which has contacts with the case as significant as New York's. The obvious purpose

> of CPLR 202 is to bar from imposing on the New York courts any case which has an equal or greater claim on the attention of a foreign forum. If there are several such forums which would be just as appropriate for suit as New York, and any one of them bars the claim, the intent underlying CPLR 202 should bar it in New York, too.

D.D. Siegel, New York Practice 58 (1978).

b. Application of CPLR 202 to Agent Orange Litigation

As already demonstrated, it is the view of the *federal* court of appeals that for borrowing statutes purposes, the cause of action accrues under New York law at the place where the injury occurred. Under New York law a cause of action based on injuries due to exposure to a deleterious substance accrues when the substance is last inhaled, ingested or injected. *Thornton v. Roosevelt Hospital,* 47 N.Y.2d 780, 417 N.Y.2d 920, 391 N.E.2d 1002 (1979) (injection); *Matter of Steinhardt v. Johns-Manville Corp.,* 54 N.Y.2d 1008, 466 N.Y.S.2d 244, 430 N.E.2d 1297 (1981), *appeal dismissed, 456 U.S. 967, 102 S.Ct. 2226, 72 L.Ed.2d 840 (1982) (inhalation); Fleshman v. Eli Lilly & Co.,* 62 N.Y.2d 888, 478 N.Y.S.2d 853, 467 N.E.2d 517 (1984) (DES).

If the determination of "when" controls the determination of "where" the injury occurred, the place of injury for "Agent Orange" serviceperson plaintiffs would be Vietnam. *Stafford v. International Harvester Co.,* 668 F.2d 142 (2d Cir.1981), stands for the proposition that Vietnam's statute of limitations cannot be used since it is not likely that any of the defendant corporations is or would have been amenable to process in Vietnam. *Cf. Neal v. Butler Aviation International, Inc.,* 422 F.Supp. 850

(E.D.N.Y.1976) (Vietnamese statute not applicable to United States corporate defendant). *See also In re "Agent Orange" Product Liability Litigation,* 580 F.Supp. 690, 707-708 (E.D.N.Y.1984), for a discussion of policy reasons for not looking to Vietnam law.

So far as nonresidents are concerned, there is no basis for claiming that the cause of action arose in New York. Some support might be marshalled for the proposition that the injury took place in the state of residence where manifestations did occur. *Martin v. Julius Dierck Equipment Corp.*, 384 N.Y.S.2d at 482; *Natural Resources Corp. v. Royal Resources Corp.*, 427 F.Supp. 880, 883-85 (S.D.N.Y.1977); *Sack v. Low,* 478 F.2d 368. *But cf. Stafford v. International Harvester Co.*, 668 F.2d at 152 (dictum). But this result is not required by any analytical imperative. Once Vietnam is rejected as the place of occurrence for statute of limitations purposes, choice of an arbitrary "place of occurrence" is required. The litigation cannot, like The Man Without a Country, travel endlessly from sea to sea without ever finding a home port.

It might be argued that since the place of injury could not control, CPLR 202 should have no application. The argument is attractive and is not out of keeping with the language of the provision itself. This approach would result in a single statute, New York's, being applied to all plaintiffs in the class. This statute could be either the Special Agent Orange statute or New York's personal injury statute, *see infra. Cf.* Note, Mechanical and Constitutional Problems in the Certification of Mandatory Multistate Mass Tort Class Actions Under Rule 23, 49 Brooklyn L.Rev. 517 (1983) (full discussion of federalism concerns).

The table set out in Appendix E, *infra,* suggest the enor-

mous problems involved in applying the statutes of each plaintiff's residence under New York's CPLR 202 if place of residence of servicepersons or place of occurrence for wives and children is used in this class action. At least as to servicepersons, such a result would make it almost impossible to administer the litigation sensibly. Transaction costs would be come so high as to be uneconomic both for the parties and the courts. Speaking in the context of selecting a proper statute of limitations for civil rights litigation purposes, the Supreme Court has recently reminded us that "assuring the full availability of a judicial form necessitates attention to the practicalities of litigation." *Burnett v. Grattan,* ____ U.S. ____, ____, 104 S.Ct. 2924, 2930, 82 L.Ed.2d 367 (1984). What is a proper statute for one litigation may be quite inappropriate for another. *Id.*

Although New York has enacted a special Agent Orange statute of limitations, its existence does not necessarily provide warrant for ignoring CPLR 202. While the introductory clause of the statute, CPLR 214-b, states: "Notwithstanding any provision of law to the contrary," the reference appears to have been intended to avoid application of CPLR 214, the three-year statute for personal injury cases, to New York veterans. It does not suggest that CPLR 202 is inapplicable. In his Practice Commentaries on CPLR 214-b, Judge McLaughlin concludes that even were the Special Agent Orange Statute construed to cover nonresidents, "a nonresident plaintiff . . . would also have to deal with the additional hurdle of CPLR § 202, the borrowing statute." *McKinney's Cons.Laws of N.Y.*, Book 7B § 214-b, at 198 (Supp.1983). As to individual suits, this conclusion may well be correct; as to class members it may not be because of the special class action issues discussed in 4, *infra.*

c. CPLR 214

If New York's Special Agent Orange Statute is not applicable to nonresident class members, see discussion *infra*, then CPLR 214, the New York personal injury three-year limitation, will bar the causes of action of all nonresident servicepersons without any need to refer to any other state's statutory period. Since the last serviceperson returned from Southesat Asia more than a decade ago, the three-year period necessarily elapsed before the certification of the class action tolled the statute for all class members. New York has a very restrictive rule on time. It is measured from exposure, to discovery of the injury. *See, e.g., Fleishman v. Eli Lilly & Co.*, 62 N.Y.2d 888, 478 N.Y.S.2d 853, 467 N.E.2d 517 (1984); *Steinhardt v. Johns-Manville Corp.*, 54 N.Y.2d 1008, 446 N.Y.S.2d 244, 430 N.E.2d 1297 (1981); O.G. Chase, Civil Litigation in New York 252-53 (1983); Birnbaum, Statutes of Limitations in Products Liability, N.Y.L.J., Feb. 29, 1984, p. 1, col. 1. Because CPLR 202 calls for application of the shorter period, the only other relevant statutory period would be one shorter than there years, with the same net result: the action would be barred.

3. Single Time-Bar Period Based upon Federal or National Consensus Law

a. Federal Substantive Law

If federal substantive law controlled a reasonable argument could be constructed that absence of an applicable federal statute of limitations gives the courts power to develop a single common law time-bar based upon theories of laches or using analogous state and federal statutes and cases. *See, e.g., Delconstello v. International Brotherhood of Teamsters*, 462 U.S. 151, 103 S.Ct. 2281, 76 L.Ed.2d 476 (1983). This route has been blocked by the

Court of Appeals. *In re "Agent Orange" Product Liability Litigation,* 635 F.2d 987 (2d Cir.1980), *cert. denied,* 454 U.S. 1128, 102 S.Ct. 980, 71 L.Ed.2d 116 (1981), held that for jurisdictional purposes no federal question is presented by this litigation. The case must be considered as having been grounded on diversity jurisdiction under 28 U.S.C. § 1332, with all the resulting complex *Erie* issues. It is for this reason that a decision on the application of statutes of limitation was reserved in the general conflicts opinion., *In re "Agent Orange" Product Liability Litigation,* 580 F.Supp. 690, 713 (E.D.N.Y.1984).

In a footnote the Court of Appeals declared that it "did not decide whether potential defenses implicating federal interests such as the government contract defense would be governed by federal or state law." *In re Diamond Shamrock Chemical Co.,* 725 F.2d 858, 861 n. 2 (2d Cir.) *cert. denied,* ____U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 745 (1984). A statute of limitations is sometimes treated as a defense. *See* N.Y. CPLR 3211(a)(5). But the court's footnote was written without consideration of the statute of limitations problem, leaving the issue open.

b. National Consensus Law

Although this court's opinion on conflicts generally determined that a national consensus law applies substantively, *In re "Agent Orange" Product Liability Litigation,* 580 F.Supp. 690 (E.D.N.Y1984), the opinion does not necessarily provide warrant to deal with statutes of limitations by looking to a single law. The general conflicts opinion assumed that each state would in effect agree that its own state substantive law required a single national common law. Since, however, time limitations rules are not

created by common law but by statute, there is far less freedom for the court to shape the law to meet new problems. National consensus law thus offers little aid to plaintiffs on statutes of limitations problems.

4. Single Time-Bar Period for Class Actions

The effect of class action certification on the applicable law was discussed briefly in the court's general conflicts opinion where we assumed, for the purposes of that opinion that class certification had no bearing on applicable law. *See In re "Agent Orange" Product Liability Litigation*, 580 F.Supp. 690, 695 (E.D.N.Y.1984) (discussing the effect of *Van Dusen v. Barrack*, 376 U.S. 612, 84 S.Ct. 805, 11 L.Ed.2d 945 (1964). It was not decisive in that context because case law permitted the application of a single substantive rule on other grounds. The situation is different, however, when the issue is which time-bar rule to apply since, as noted *infra*, such rules are overwhelmingly statutory with only modest room for caselaw development.

a. General Theory

The class action provides a useful conceptual vehicle for a unified treatment of time limits. In effect the class action is a judicial construct designed to treat all members of the class as if they stood in the shoes of the named representative plaintiffs. Arguably, although there is no precedent on the point, members of the class could be constructively treated as if they were New York residents for the purposes of the suit and New York's statute of limitations.

Lest this concept be deemd far-fetched, it is well to recall that it is just this kind of fictional device that enabled the English courts to expand their jurisdiction while avoiding difficult conflicts decisions. As Professor Fried-

rich Juenger points out:

> As late as 1774, it was still necesary for the plaintiff to allege that he had been falsely imprisoned on the island of Minorca "at London . . . in the parish of St. Mary le Bow, in the ward of Cheap." When defendant dared object to this geographical folly, Lord Mansfield observed that he "was embarassed a great while to find out whether counsel for the plaintiff really meant to make a question of it," pointing out that "the law had . . . invented a fiction . . . for the furtherance of justice; and . . . a fiction of law shall never be controverted." However contrived this solution may appear, it helped the common law courts escape the difficulties of devising choice of law rules and of applying foreign law. As a result, unlike on the Continent, in England, jurisdiction necessarily implied the choice of forum law.

Juenger, A Page of History, 35 Mercer L.Rev. 419, 436-37 (1984).

Much of the class action concept and practice reflects a pragmatic legal state of mind equivalent to that of the sensible English common law judges utilizing the parish of St. Mary le Bow fiction. For example, the opt-out alternative for members of the main class in the instant action, *In re "Agent Orange" Product Liability Litigation,* 100 F.R.D. 718 (E.D.N.Y.1983), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984), is largely based on the same psychological premises as is the book-of-the-month club operation – people will usually not take the trouble to act. Requiring opting-out rather than joinder therefore obviously skews the law in favor of class actions and represents a major change in effective substantive rights between plaintiffs and defendants.

We have assumed in the general conflicts decision that casting the litigation in the form of a class action does not affect the rule of conflicts while recognizing that certifying the dispute as a class action has had a profound effect on many aspects of the substantive-procedural balance. *In re "Agent Orange" Product Liability Litigation,* 580 F.Supp. 690, 695-96 (E.D.N.Y.1984). *See also* J.T. McLaughlin & P. Elliott, Class Actions, in II ALI-ABA Civil Practice & Litigation in Federal and State Courts, 973, 1002 (1984) ("class action practice in recent years has shown that the courts have tacitly, and sometimes expressly, abandoned substantive legal principles in order to allow class actions to proceed"). Specifically in the area of tolling of statutes of limitations, the class action provides protection for plaintiffs who do not know each other and whose relationship is the tenuous one of arguably having had similar rights violated by the same defendants. In many cases they were neither aware of each others' existence or even of the fact that they had a claim. To press the concept a little further so as to provide not only identicial substantive law protection, but also identical statute of limitations protections of the forum state is compatible with theory. As J.A. Jolowicz, Professor of Comparative Law, Trinity College, Cambridge reminds us:

> The class action in the American mode has become, whether we like it or not, much more than a means of securing redress for large numbers of small claimants; it provides a way of depriving the defendant of what are seen and described as his "ill-gotten gains" and of detering people from similar conduct in the future.

Jolowicz, Three Dilemmas of Civil Litigation, 18 Is.L. Rev. 161, 172 (1983). See also the effect of certification in avoiding diversity jurisdiction problems, referred to in the

Introduction, *supra.*

However attractive this shaping of the law of statutes of limitations might be, courts would be reluctant to adopt it absent some clear directive from Congress. There are two reasons for this. First, time-bar rules are overwhelmingly statutory, and, second, the matter has been held to be substantive for most *Erie* purposes and generally not subject to the rule-making authority upon which Rule 23 was erected.

Time-bar periods are primarily creatures of the legislative rather than the judicial process. *N.Y. State Labor Relations Bd. v. Wyckoff Heights Hosp.,* 59 Misc.2d 284, 298 N.Y.S.2d 576 (Sup.Ct.1969) (court refused to introduce a period of limitations without statutory authority). *See generally* 1 H.L. Korn, et al., New York Civil Practice, para. 201.01 (1983). Upon passage of the specified period recovery is denied to well-founded as well as unjustified claims without regard to whether delay in bringing suit could have been avoided. Statutes of limitations represent a legislative judgment that occasional hardship and injustice is outweighed by the promise of repose, the outlawing of stale claims and the difficulty of obtaining reliable evidence with the passage of time. *Chase Securities Corp. v. Donaldson,* 325 U.S. 304, 314, 65 S.Ct. 1137, 1142, 89 L.Ed 1628 (1945); *Schmidt v. Merchants Despatch Transp. Co.,* 270 N.Y. 287, 302, 200 N.E. 824, 828 (1936).

Legislatures never contemplated a case such as the "Agent Orange" litigation when they adopted general statutes of limitations provisions. But this does not excuse ignoring the language of the statutes.

b. Federal

Statutes of limitations do not fit comfortably in either of the chameleon-like categories of "procedure" and "substance." *See, e.g., Hanna v. Plumer,* 380 U.S. 460, 471, 85 S.Ct. 1136, 1144, 14 L.Ed.2d 8 (1965) ("The line between 'substance' and 'procedure' shifts as the legal context changes"); *Guaranty Trust Co. v. York,* 326 U.S. 99, 108, 65 S.Ct. 1464, 1469, 89 L.Ed. 2079 (1945) (Frankfurter, J.) ("each [of the terms 'substance' and 'procedure']" implies different variables depending upon the particular problem); C.A. Wright, Law of Federal Courts 378 (4th ed. 1983). Often dsecribed as "remedial," statutes of limitations might well have been placed in the procedural category for some of the purposes that now concern us. But they were not, and in *Guaranty Trust Co. v. York,* the Court held that a state statute of limitations must be characterized as "substantive" and applied in a diversity case to ensure that "the outcome of the litigation in the federal court should be substantially the same, so far as legal rules determine the outcome of a litigation, as it would be if tried in a State court." 326 U.S at 109, 65 S.Ct. at 1470. *See* C.A. Wright, *supra,* at 379; Blume & George, Limitations and the Federal Courts, 49 Mich.L.Rev. 937 (1951).

Some perplexing results of the Supreme Court's view are revealed in a case such as "Agent Orange." The outcome determinative test of *York* has little meaning when such a suit could probably never have been pressed in New York courts because of that state's restrictive view of class actions, a matter discussed below. *Cf. Ragan v. Merchants Transfer & Warehouse Co.,* 337 U.S. 530, 69 S.Ct. 1233, 93 L.Ed. 1520 (1949) (dismissed on state statute of limitations grounds although complaint timely filed under

Fed.R.Civ.P. 3); *Walker v. Armco Steel Corp.*, 446 U.S. 740, 100 S.Ct. 1978, 64 L.Ed.2d 659 (1980) (same). This is one of the entrancing aspects of the class action area – we deal with a series of constructs and "as ifs" having little relation to the world in or outside federal and state courthouses.

It is one of the many paradoxes of the field that viewed from the state perspective, "the statute of limitations is generally deemd 'procedural.' " D.D. Siegel, New York Practice 34 (1978). *See also, e.g., Fieldman v. Roper Corp.*, 586 F.Supp. 936 (D.C.Miss.1984) (statutes of limitation as well as tolling provisions are procedural for conflicts purposes). Passing of the applicable period does not eliminate the cause of action but suspends the court's power to grant a remedy. *Hulbert v. Clark*, 125 N.Y. 295, 28 N.E. 638 (1891). It is waivable. N.Y. CPLR 3018(b), 3211(a)(5), 3211(e). *But cf. Romano v. Romano*, 19 N.Y.2d 444, 280 N.Y.S.2d 570, 227 N.E.2d 389 (1967) (time for right of annulment not a statute of limitation and not waivable). The court's discretion to ignore the statute, however, is specifically denied. N.Y. CPLR 201.

Even the federal rule that statutes of limitations are substantive for *Erie* purposes becomes somewhat murky about its edges since federal procedural rules are relied upon to add to state tolling provisions. For example, under Rule 15(c) a new party may be added and an amendment relate back to the beginning of the action, ensnaring a defendant who might have been entitled to a dismissal in the state courts. *See, e.g.*, C.A. Wright, *supra*, at 384-85 & n. 4. Even more important, from our point of view, is that commencement of the federal class action tolls the statute for all members of the class. *Cf. Chardon v. Soto*, 462 U.S. 650, 103 S.Ct. 2611, 77 L.Ed.2d 74 (1983); *American*

Pipe & Const. Co. v. Utah, 414 U.S. 538, 94 S.Ct. 756, 38 L.Ed.2d 713 (1974); C.A. Wright, *supra* at 4867 & nn. 96-97; Note, The Tolling of State Statutes of Limitations in Federal Courts, 71 Colum.L.Rev. 865 (1971). There is no persuasive conceptual reason why the Court should not go beyond tolling and some ancillary matters of interpretation to permit Rule 23 to encroach somewhat on the substance and abstract theory of *Erie* in the area of class actions. Its tolling rule, as Professor Wright explains, was needed for purely pragmatic reasons.

> This result is reached even if the court, for reasons of judicial housekeeping, ultimately holds that it will not allow the suit to proceed as a class action, since otherwise members of the class would have to file a protective individual suit pending that determination.

C.A. Wright, *supra,* at 486. Once embarked on a course toward sensible results, it is difficult to stop the voyage arbitrarily at a point where people in the same position and class of national servicepersons who fought a single war and were allegedly injured by a single product while serving the nation are treated so differently — one group obtaining a remedy and another getting nothing.

This is a gray area falling between that which is clearly substantive or procedural.

> To hold that a Federal Rule of Civil Procedure must cease to function whenever it alters the mode of enforcing state-created rights would be to disembowel either the Constitution's grant of power over federal procedure or Congress' attempt to exercise that power in the Enabling Act.

Hanna v. Plumer, 380 U.S. 460, 473-74, 85 S.Ct. 1136, 1145, 14 L.Ed.2d 8 (1965). What we are now considering is

but a step beyond the tolling provision which operates for the benefit of all class members.

In *Guaranty Trust Co. of New York v. York,* 3426 U.S. 99, 65 S.Ct. 1464, 89 L.Ed. 2079 (1945), the Supreme Court determined that a statute of limitation substantially affects the outcome of the litigation. For the purposes of rulemaking authority, statutes of limitation must, therefore, be considered substantive in individual cases. But it does not follow that for that reason an attempt to imply from Rule 23 a statutory limitation applicable to class actions in special cases such as "Agent Orange" would exceed the grant of congressional authority. Substantive rights established by state statutes of limitations would not necessarily be abridged by applying a federal rule prescribing a limitation period for diversity cases in unique cases such as the one before us. *But cf.* 19 C. Wright, A. Miller & E. Cooper, Federal Practice and Procedure § 4509 (1982); Ely, The Irrepressible Myth of Erie, 87 Harv.L. Rev. 693, 726-27 (1974) ("Congress could constitutionally enact" a statute prescribing a limitation period for diversity cases, but the Court could not do it under the Rules Enabling Act).

On balance, however, it would be too great a departure from history and precedent to use the federal class action as a method of overiding *Erie* with its constitutional overtones. *Erie* requires deferring to state law.

c. New York

The New York class action provision, N.Y. CPLR 901 *et seq.*, was largely modeled on the federal rule. *See, e.g.*, Homburger, State Class Actions and the Federal Rule, 71 Colum.L.Rev. 609 (1971); D.D. Siegel, New York Practice 176 & n. 27 (1978). The language of the statute is as

broad in concept as that of Rule 23. The two class action devices differ primarily in the areas of opt-out provisions, notice requirements and counsel fees.

New York's rule is, in some degree, a response to the need for expanded state-level class action procedures caused by the Supreme Court's restrictive decisions in *Snyder v. Harris*, 394 U.S. 332, 89 S.Ct. 1053, 22 L.Ed.2d 319 (1969) (no aggregation of claims) and *Zahn v. International Paper Co.*, 414 U.S. 291, 94 S.Ct. 505, 38 L.Ed.2d 511 (1973) (rejecting the use of pendent or ancillary jurisdiction to surmount the requirement that each individual's claim exceed $10,000), which severely restricted the use of federal class actions in diversity cases. D.D. Siegel, New York Practice § 142 (1983).

The basic provisions of CPLR 901 permit a class action to be certified if all of the following conditions are met:

> 1. the class is so numerous that joinder of all members . . . is impracticable;
>
> 2. there are questions of law or fact, common to the class which predominate over any questions affecting only individual members;
>
> 3. the claims or defenses of the representative parties are typical of the claims or defenses of the class:
>
> 4. the representative parties will fairly and adequately protect the interests of the class; and
>
> 5. a class action is superior to other available methods for the fair and efficient adjudication of the controversy.

Despite the New York legislative response to the need for broadened scope and more liberal procedures in class action, "the approach to Article 9 of the CPLR continues

to be a cautious if not hostile one by most courts." D.D. Siegel, New York Practice § 141 (Supp.1982). As Judge McLaughlin notes in his Practice Commentaries, *McKinney's Cons. Laws of N.Y.*, Book 7B, CPLR 901, (Supp. 1978): "it has become clear that the New York courts have not embraced the class action with the same warmth it has received in the federal courts." *See generally* Dickerson, Class Actions Under Article 9 of the CPLR, N.Y.L.J., March 18, 1984, p. 1.

Illustrative of this restrictive attitude is *Rosenfeld v. A.H. Robins Co.*, 63 A.D.2d 11, 407 N.Y.S.2d 196 (2d Dept.1978), a class action on behalf of all New York women who had suffered pelvic injury from use of an intra-uterine birth control device. The court in *Rosenfeld* denied both total and partial class action certification on the grounds that common questions of law and fact did not predominate. The court acknowledged that consideration should be given to "isolating the issue of liability for class action treatment, while allowing the individual determinations on damages to be tried separately thereafter." 63 A.D.2d at 15, 407 N.Y.S.2d at 198-99. *Compare* 7A C.A. Wright, A. Miller & M. Kane, Federal Practice and Procedure § 1783 (1983) (federal class action treatment in mass tort cases) *with* D.D. Siegel, New York Practice § 142 (1978) (use of CPLR 901 in mass tort cases). It concluded that CPLR 901 was inapplicable in product liability cases where the key issue of whether the individual class member's injury was caused by the product's defect must be resolved on an individual basis. 63 A.D.2d at 20, 407 N.Y.S.2d at 201. Moreover, what is particularly important for our purposes is that the court noted that defendant had raised as an affirmative defense "the Statute of Limitations . . . which can[not] be determined on a class-wide basis." *Id.* at 16, 407 N.Y.S2d at 199.

The New York Court of Appeals refused to hear an appeal from the *Rosenfeld* denial of class status on the ground that the disposition of a motion for class certification is not a final decision. 46 N.Y.2d 731, 413 N.Y.S.2d 374, 385 N.E.2d 1301 (1978). This is the position taken by the Supreme Court in *Coopers & Lybrand v. Livesay,* 437 U.S. 463, 470-77, 98 S.Ct. 2454, 2458-62, 57 L.Ed.2d 351 (1978). The effect of the New York ruling illustrates the narrow approach to class action application. Justice Lazer, in his instructive opinion in *Friar v. Vanguard Holding Corp.,* 78 A.D.2d 83, 434 N.Y.S.2d 698 (2d Dept. 1980), notes that "class action status has been denied in 75% of the reported cases construing article 9 since its enactment in 1975 . . . indica[ting] a continuing tendency toward narrow construction of the statute." *Id.* at 92, 434 N.Y.Y.2d at 704.

Viability of multistate-plaintiff class action litigation in New York is especially tenuous. While certification of multistate class actions poses no constitutional problems in federal court, *see Hansberry v. Lee,* 311 U.S. 32, 61 S.Ct. 115, 85 L.Ed.22 (1940) (in personam jurisdiction not required to bind nonparties in class suit), the question of whether a New York court can or should exercise jurisdiction over nonresident class members remains unsettled. *See Reis v. Club Med, Inc.,* 81 A.D.2d 793, 439 N.Y.S.2d 127, 128 (1st Dept.1981) ("few" New Yorkers); *Bloom v. Cunard Line, Ltd.,* 76 A.D.2d 237, 430 N.Y.S.2d 607, 609 (1st Dept.1980) ("great bulk" non-rsidents); *Gottlieb v. March Shipping Passenger Services,* 67 A.D.2d 879, 413 N.Y.S.2d 679, 680 (1st Dept.1979) ("perplexing and unsettled problem" of whether non-residents can be bound by New York class action); O.G. Chase, Civil Litigation in New York, 358 (1983). See generally as to the capacity of state class actions to replace federal class actions, Learch,

Class Actions, in IV ALI-ABA, Civil Practice and Litigation in Federal and State Courts 1855, 1899-1906 (1984).

There is disagreement among the states on the issue of whether in personam jurisdiction is necessary in a state class action in order for the judgment to be binding on nonresident class members. The Illinois Supreme Court in *Miner v. Gillette Co.*, 87 Ill.2d 7, 56 Ill.Dec. 886, 428 N.E.2d 478 (1981), *cert. dismissed,* 459 U.S. 86, 103 S.Ct. 484, 74 L.Ed.2d 249 (1982), held that class actions were an exception to the general rule requiring in personam jurisdiction. *Accord, Shutts v. Phillips Petroleum Co.*, 222 Kan. 527, 567 P.2d 1292 (977), *cert. denied,* 434 U.S. 1068, 98 S.Ct. 1246, 55 L.Ed.2d 811 (1978) (procedural due process is the element necessary to exercise jurisdiction over nonresident plaintiff class members).

New Jersey and Pennsylvania courts have reached the opposite conclusion. *Feldman v. Bates Mfg. Co., Inc.*, 143 N.J. Super. 84, 362 A.2d 1177 (1976), decided that a state court cannot exercise binding jurisdiction over nonresident class members without minimum contacts with the state. In *Klemow v. Times, Inc.*, 466 Pa. 189, 352 A.2d 12, *cert. denied,* 429 U.S. 828, 97 S.Ct. 86, 50 L.Ed.2d 91 (1976), the court declared that class actions must be limited to state residents and those who submit to the court's jurisdiction such as opt-in class members. 352 A.2d at 16 n. 15.

The New York Court of Appeals has not yet addressed this issue. Lower courts suggest a conservative attitude. *See, e.g., Simon v. Cunard Line Ltd.*, 75 A.D.2d 283, 428 N.Y.S.2d 952, 956 (1st Dept.1980) (denied certification in a breach of contract class action by multi-state passengers); *Katz v. NVF Co.*, 119 Misc.2d 48, 55, 462 N.Y.S.2d 975, 980 (Sup. Ct. 1983) ("Felxibility is . . . necessary in

applying traditional principles of jurisdiction to nonrsident plaintiffs."), *rev'd on other grounds,* 100 A.D. 470, 473 N.Y.S.2d 786 (1984); *Brandon v. Chefetz,* 121 Misc.2d 54, 467 N.Y.S.2d 312 (Sup. Ct. 1983) (personal jurisdiction issue had never been settled by the appellate courts, although 51.5 percent of the shareholders owning 78 percent of the stock were state residents.) In *Chimenti v. American Express Co.,* 97 A.D.2d 351, 467 N.Y.S.2d 357 (1st Dept. 1983), although the jurisdictional issue was not directly addressed, the court declared that "any class, if ultimately certified, might also be better limited to residents of New York State." 467 N.Y.S.2d at 359. *See also* Homburger, State Class Actions and the Federal Rule, 71 Colum.L.Rev. 609, 657-58 (1971); Dickerson, A Review of Class Actions under C.P.L.R. Article 9, N.Y.LJ., March 14, 1984, p. 1, col. 2.

Given the New York courts' ambivalent and somewhat restrictive view of class actions, it is doubtful that, were they handling the *Agent Orange* litigation, they would apply a single statute of limitations. It is not even clear that they would accept such a case. New York's attitude toward class actions places this court in the strange position of sitting as if it were a state court under *Erie,* but, through the use of Federal Rule 23, reaching a result using state law in a manner that the state court almost certainly would eschew. In short, the class action route to a single statue, if not leading to a dead end, does require traversing an almost impenetrable legal jungle.

5. Single Time-bar Period for American Veterans Based Upon Interpretation of New York Statute

The New York Civil Practice Law and Rules deals with statutes of limitations in comprehensive Article 2. As the reader is already aware, the CPLR contains a series of

discreet time limitations applicable to different kinds of claims (*e.g.*, CPLR 214 three years for personal injury), methods of computing (*e.g.*, CPLR 203(f) time computed from actual or imputed discovery) and a special conflict of laws provision applicable to causes of action accruing without the state (CPLR 202). New York has also adopted a special section dealing with Agent Orange claims (CPLR 214-b) and an uncodified preservation of rights and remedies provision for Agent Orange cases (L.1981, c. 266, § 4, amended L.1982, c. 153, § 2, L.1983, c. 358, § 1).

The special section for Agent Orange claims tolls the statutes of limitations. CPLR 214-b, "Action to recover damages for pesonal injury caused by contact with or exposure to phenoxy herbicides" states:

> Notwithstanding any provision of law to the contrary, an action to recover damages for personal injury caused by contact with or exposure to phenoxy herbicides while serving as a member of the armed forces of the United States in Indo-China from January first, nineteen hundred sixty-two through May seventh, nineteen hundred seventy-five, may be commenced within two years from the date of the discovery of such injury, or within two years from the date when through the exercise of reasonable diligence the cause of such injury should have been discovered, whichever is later.

L.1981, c. 266, § 3, amended L.1982, c. 153, §1.

Even more important, a special Preservation of Rights and Remedies revival section was adopted making it possible to commence an Agent Orange action prior to June 16, 1985, regardless of the date that the injury was or should have been discovered. The provision reads:

> Every cause of action for an injury or death caused by contact with or exposure to phenoxy herbicides while serving as a member of the armed forces of the United States in Indo-China from January first, nineteen hundred sixty-two through May seventh, nineteen hundred seventy-five, which is or would be barred prior to June sixteenth, nineteen hundred eight-five, because the applicable period of limitation has expired is hereby revived or extended as the case may be, and an action thereon may be commenced and prosecuted provided such action is commenced not later than June sixteenth, nineteen hundred eighty-five.

L.1981, ch. 266 § 4, amended L.1982, c. 153, § 2, L.1983, c. 358, § 1.

The preamble to the 1981 amendments containing supporting legislative findings embodied in section 1 of the Laws of 1981, Chapter 266, stresses the legislature's primary intention to protect New York's residents. It reads:

> During the Vietnam era, *over six hundred thousand New York state residents served our nation in Indo-China. A large number of these people were exposed* to phenoxy herbicides. The legislature finds that there is credible scientific evidence that exposure to these toxic substances has caused serious physical disabilities. The legislature also finds that *the citizens of this state who were exposed* to these substances have been denied access to the courts.
>
> This legislature finds that at the time of the enactment of subdivision five of section two hundred fourteen of the civil practice law and rules,

the legislature had been principally motivated by the desire to discourage "belated litigation". Belated litigation did not serve the interests of justice since protracted delays in litigating issues resulted in the failing memory of witnesses and the disappearance of evidence that was relevant and germane to such issues. It was never the intent of the legislature in imposing limitations, *to foreclose the citizens of this state* from prosecuting legitimate claims, provided such claims are diligently and expeditiously pursued. An exception to the general period of limitation rule is required when the pathological effect of an injry occurs without perceptible trauma, and the victim is blamelessly ignorant of the cause of the injury.

The legislature further finds that, in the interest of justice, the claims of veterans of the Vietnam era should not be prohibited by the holding that a cause of action accrues, and the statute of limitations commences to run from the "date of injury." The obstruction to the prosecution of legitimate claims by individuals who served in Indo-China should be remedied by a discovery statute of limitations.

The legislature further finds that the compelling circumstances present indicate a strong moral obligation by the state *to revive time barred causes of action that have accrued in favor of citizens of this state* who served in the armed forces during the Vietnam era, and had been exposed to and had come in contact, with toxic chemical substancs, and suffered severe physical disabilities which were undetected or undiscovered until years later.

(Emphasis added.)

CPLR 214-b, the special revival section and the preamble are, from time to time, referred to jointly below as "the Special Agent Orange Statute." The effect of these provisions is to remove any bar to Agent Orange cases brought by servicepersons. Wives and children were not covered.

Two key questions are raised. First, is the Special Agent Orange Statute constitutional and, second, does it apply to nonresidents.

a. Constitutionality

State statutes reviving time-barred actions are not prohibited by the due process clause of the Fourteenth Amendment. The Supreme Court has characterized statutes of limitations as representing

> a public policy about the privilege to litigate . . . [T]he history of pleas of limitations shows them to be good only by legislative grace and to be subject to a relatively large degree of legislative control.

Chase Securities Corp. v. Donaldson, 325 U.S. 304, 314, 65 S.Ct. 1137, 1142, 89 L.Ed. 1628 (1945). The Court, reaffirming is analysis first voiced in *Campbell v. Holt,* 115 U.S. 620, 6 S.Ct. 209, 29 L.Ed. 483 (1885), concluded "as a matter of constitutional law, . . . statutes of limitation go to matters of remedy not to destruction of fundamental rights," and are, therefore, rules in which flexibility rather than stability is of prime importance. 325 U.S. at 314, 65 S.Ct. at 1142. The *Chase* Court held that

> the Fourteenth Amendment does not make an act of state legislation void merely because it has some retrospective operation. . . . [I]t cannot be

> said that lifting the bar of a statute of limitation so as to restore a remedy lost through mere lapse of time is per se an offense against the Fourteenth Amendment.

Id. at 315-16, 65 S.Ct. at 1143.

New York courts also recognize the state legislature's wide power to extend or revive a cause of action. *Gallewski v. H. Hentz & Co.*, 301 N.Y. 164, 174, 93 N.E.2d 620, 624 (1950) held:

> [A] revival statute is not necessarily and per se void as a taking of "property" without due process of law . . . . [T]he Legislature may constitutionally revive a personal cause of action where the circumstances are exceptional and are such as to satisfy the court that serious injustice would result to plaintiffs not guilty of any fault if the intention of the Legislature were not effectuated.

McCann v. Walsh Construction Co., 282 A.D. 444, 123 N.Y.S.2d 509 (3d Dept.1953), *aff'd*, 306 N.Y. 904, 119 N.E.2d 596 (1954), is particularly instructive since its facts are reminiscent of those in Agent Orange. Plaintiff suffered from caisson disease, caused by working in compressed air, which was not discovered until after the period required for filing workmen's compensation claims had expired. New York acted constitutionally in extending the claim period of the Act. The court wrote:

> This is a classic instance of the granting of legislative relief in a situation where the arbitrary application of the statute of limitations would work injustice. As the legislature recognzied, in the case of a disease of an insidious character, the effects of which might be latent or long delayed, the right to compensation might be barred by the operation of the Statute of Limitations

> even before the claimant was aware of the fact that he had the disease. In these circumstancse, the legislature did no more than to comply with the simple demands of justice in relieving innocent claimants of the effect of the statutory time limitations which would otherwise bar their right to compensation.

123 N.Y.S.2d at 514. *See also Robinson v. Robins Dry Dock & Repair Co.*, 238 N.Y. 271, 144 N.E. 579 (1924); *Denkensohn v. Ridgway Apartments, Inc.*, 13 Misc.2d 389, 180 N.Y.S.2d 144 (2d Dept.1958).

The New York Legislature acted within both federal and state constitutional limitations in lifting the statutory bar to recovery for servicepersons injured by contact with Agent Orange. Legislative findings place the statute well within the scope of the *Gallewski* and *McCann* rationale permitting legislative relief in the form of revival of time-barred claims.

The traditional purposes underlying statutory limitations are not affected by the revival of Agent Orange time-barred claims. Staleness of claims is not a relevant issue in this litigation. Defendants have not lost evidence on their key defenses through the passage of time. On the contrary, time has worked in favor of both plaintiffs and defendants. The availability of pertinent information, factual analyses and scientific studies has increased during the interim period facilitating the preparation of the case for all litigants. Nor are defendants suddenly faced with the reinstigation of an action for which they are unprepared. Defendants have been aware, since not all claims were time-barred, that they would be litigating these issues at some point against some plaintiffs. The equities protected by the enforcement of statutory limitations are not endangered

some legislative awareness of the scope of the statute's possible applicability. Thus the *Memorandum in Support of Assembly 7231-A* (June 5, 1981) from the Division of Veterans Affairs, State of New York, specifically mentions, "[t]he Bill in the form presented is not confined or limited to 'citizens of New York State.' " A letter from the State of New York Insurance Department to the Counsel to the Governor (June 12, 1981) discusses the problems that might result from New York becoming "the center of all litigation involving herbicides" because the benefit of CPLR 214-b was not limited to New York State residents.

To summarize, the "Agent Orange" statute, on its face, does not dictate the exclusion of nonresident plaintiffs. The legislative history, although not determinative, indicates that the Legislature was aware that nonresidents were not explicitly excluded from the statute's benefits. Moreover, as the last enacted provision is narrower in scope than the more general sections of the CPLR, it can be argued that the Special Agent Orange Statute should apply to this unique suit. It is possible, therefore, to infer that the intention of the Legislature was to include nonresidents. The district court, in predicting the decision of the highest court of the state, would be rationally able to conclude that the special Agent Orange Statute was applicable to resident and non-resident American serviceperson plaintiffs alike.

An argument can also be made against the application of the Special Agent Orange Statute to the claims of nonresident servicepersons. Although the statute on its face is not limited to New York State residents, the preamble makes explicit reference to "over six hundred thousand New York state residents who served our nation in Indo-China." 1981 N.Y.Laws, ch. 266 § 1. While prefatory remarks cannot be considered dispositive of the intent and scope of the legislation, there is substantial support in the legislative history of the original 1981 law and the 1982

and 1983 amendments for the contention that the "Agent Orange" statute was meant to be limited to New York residents.

Assemblyman Conners, sponsor of the "Agent Orange" bill, stated in his letter to the Counsel to the Governor (June 4, 1981): "This legislation is an important recognition of the right of a Vietnam Veteran *who is a New York resident* to have his or her day in court to redress injuries sustained as a result of contact with the deadly chemical Agent Orange." (Emphasis added.) The "Justification" section of the *New York State Assembly Memorandum in Support of Legislation* includes the following statement supporting the 1981 provision: "This legislation will allow *New York Vietnam veterans* to have their day in court." (Emphasis added.) The *New York State Assembly Memorandum in Support of A-10875*, the 1982 amendment, restates the legislature's intent "to revive time barred causes of action that have accrued *in favor of citizens of this state.*" (Emphasis added.) Additional letters and committee reports on the proposed legislation and amendments in the legislative file supplied to the court by the Counsel to the Governor of the State also support a general understanding that the benefits created by the "Agent Orange" bill were intended for New York residents.

The Legislature might have been aware that failure to limit the Special Agent Orange Statute to New York State residents could have the effect of making New York "the center of all litigation involving herbicides." See June 12, 1981 letter from the State of New York Insurance Department. It was not acting in a vacuum. At the time the "Agent Orange" statute was enacted in New York, the United States District Court for the Eastern District of New York was already the site of consolidation of the multidistrict "Agent Orange" suits, and the class action resulting in this settlement had been provisionally certified. *In re "Agent Orange" Product Liability Litigation*, 506 F.Supp.

762 (E.D.N.Y.1980). The Legislature may have assumed that the brunt of the litigation would be felt in federal court so that it was merely acting to ensure that New York residents would not be barred in that court by the state's restrictive personal injury limitation. The legislative history does not permit a firm conclusion one way or the other. There is, however, no indication at all in the legislative history that the Legislature was made aware of the subtle *Erie* and conflict of laws issues implicit in its action.

Courts are justified in taking a conservative view of special legislation of this kind. Special laws that revive causes of action are "extreme example[s] of legislative power" and are narrowly construed. *Hopkins v. Lincoln Trus Co.*, 233 N.Y. 213, 215, 135 N.E. 267 (1922). The more conservative view is that the legislature intended only to protect the interests of citizens of the state. Confirmation for that restrictive view is found in the reluctance of New York courts to exend their class action protections to nonresidents, a matter already touched upon, as well as in the special treatment of residents as part of the state's statutes of limitations scheme in CPLR 202.

Nevertheless, discrimination in favor of residents of one state against residents of another has been analyzed and struck down by the Supreme Court under a number of different provisions of the Constitution, including the commerce clause, the privileges and immunities clause, the equal protection clause and the due process clause. *See, e.g., Rusk v. Savchuk,* 444 U.S. 320, 100 S.Ct. 571, 62 L.Ed.2d 516 (1980) ~~(quasi~~ in rem jurisdiction over nonresident); *Shaffer v. Heitner,* 433 U.S. 186, 97 S.Ct. 2569, 53 L.Ed.2d 683 (1977) (same); *Austin v. New Hampshire,* 420 U.S. 656, 95 S.Ct. 1191, 43 L.Ed.2d 530 (1975) (income tax on nonresident); *Memorial Hospital v. Maricopa County,* 415 U.S. 250, 94 S.Ct. 1076, 39 L.Ed.2d 306 (1974) (residency as prerequisite for emergency treatment);

Edwards v. California, 314 U.S. 160, 62 S.Ct. 164, 86 L.Ed. 119 (1941) (indigent nonresident).

We need not determine whether these and other cases might be used to invalidate a perceived discrimination against citizens of other states and nations. It is enough for this purpose to say that avoidance of the constitutional question lends some support to an interpretation favoring uniform treatment of New York citizens and other United States servicepersons in construing the Special Agent Orange Statute. *See, e.g., Rescue Army v. Municipal Court of City of Los Angeles,* 331 U.S. 549, 568, 67 S.Ct. 1409, 1419, 91 L.Ed. 1666 (1947); *Ashwander v. Tennessee Valley Authority,* 297 U.S. 288, 346, 56 S.Ct. 466, 482, 80 L.Ed. 688 (1936) (Brandeis, J., concurring); *McKinney's Cons. Laws of N.Y.,* Book 1, Statutes § 150(c) (1971) ("If possible, a statute is required to be construed in favor of its constitutionality.").

Allowing discrimination against nonresidents in a diversity case would be particularly troubling since in *Erie* the Court recognized that "[d]iversity of citizenship jurisdiction was conferred in order to prevent apprehended discrimination in state courts aginst those not citizens of the State." *Erie R. Co. v. Tompkins,* 304 U.S. 64, 74, 58 S.Ct. 817, 820, 82 L.Ed. 1188 (1938). *See also Walker v. Armco Steel Corp.,* 446 U.S. 740, 744-45, 100 S.Ct. 1978, 1982, 64 L.Ed.2d 659 (1980).

The force of this interpetative guide against discrimination does not extend to outlawing CPLR 202, which applies a shorter statue to nonresidents. This borrowing statute was designed to avoid forum shopping. It has a widespread historical basis in American law that would probably sustain it against an attack on the ground of discrimination. *See, e.g., Canadian Northern Ry. Co. v. Eggen,* 252 U.S. 553, 40 S.Ct. 402, 64 L.Ed. 713 (1920) (sustaining borrowing statutes against claims of unconstitutionality); *Stafford v. International Harvester Co.,* 668 F.2d 142,

145 n. 1 (2d Cir. 1981); Restatement (Second) Conflict of Laws § 142 comment f (1971). A more sensitive present-day Supreme Court might, if presented for the first time with this issue, have decided it differently. *Cf., e.g.,* Note, The Fairness and Constitutionality of Statutes of Limitations for Toxic Tort Suits, 96 Harv. L.Rev. 1683 (1983). But on matters of this kind "the doctrine of *stare decisis* weighs heavily against" changes. *Walker v. Armo Steel Corp.*, 446 U.S. 740, 749, 100 S.Ct. 1978, 1984, 64 L.Ed.2d 659 (1980).

6. Wives and Children

Wives and children cannot avail themselves of the extended discovery limitation afforded by the Special Agent Orange Statute. It is applicable only to members of the American armed services. To determine which statutory period a New York court would apply to such actions, it is necessary to refer again to the borrowing statute, CPLR 202, with the exception that causes of action accruing to New York residents, whether or not servicepersons, will be governed by the appropriate New York statutory limitation.

As noted above, for most purposes of CPLR 202, the place of injury determines where the cause of action arises. With respect to the claims of children, this would probably be the place of birth rather than conception. Under *Roe v. Wade*, 410 U.S. 113, 93 S.Ct. 705, 35 L.Ed.2d 147 (1973), a cause of action would probably not be considered to have accrued to a fetus. The children's claims present few problems since virtually all states have tolling provisions that stay the running of the period during infancy. *See* Appendix E.

The place of injury with regard to wives' claims for miscarriages would probably be the place where the miscarriage occurred. While an argument could be made that

the place of injury should be the place of conception, a miscarriage would reasonably be viewed as the final injury completing the tort. For CPLR 202 purposes the cause of action would arise where and when the injury was "completed." CPLR 202 would mandate the application of the limitation period of the state where the miscarriage occurred if that period was shorter than New York State's three-year personal injury statute.

7. Vietnam Veterans Living Abroad

The claims of individual Vietnam veterans who are not United States servicepersons would presumably have been controlled by the provisions of the statutes of limiations of their respective countries, subject to CPLR 202. A case by case analysis, considering the foreign statutes and their tolling provisions, would be necessary to determine eligibility for recovery. At the Fairness Hearings, counsel for Australian and New Zealand veterans indicated that their suits would be barred by the law of those countries.

8. Conclusion on Statutes of Limitations

It is apparent that the law on statutes of limitations applicable to this case is far from clear. In view of the class action nature of the action and the desirability of having one rule apply to all class members, *see In re "Agent Orange" Product Liability Litigation*, 580 F.Supp. 690 (E.D.N.Y. 1984), were the action not settled the Special New York Agent Orange statute of limitations would be applied to all United States servicepersons who are class members. The matter is, however, sufficiently debatable that had the case been tried, the court would have required jury findings of fact permitting application of either single or multiple state statutes.

This ruling, tentatively applying a single statute to the class would not apply to servicepersons who have chosen

not to participate in the class. On balance there appears to be more reason to apply their individual state statutes of limitations to such individual actions.

Most infants – whether or not members of the class – would be unaffected by a statute of limitations. In many instances wives claiming damages will be barred whether New York or some other state statute applies without respect to whether they are members of the class or have opted out.

Uncertainties presented by the law of statutes of limitations could not finally be resolved until after trial and appeals. Avoiding the procedural frustrations, expense and delays required to resolve the issues provides another good reason for settlement.

B. Failure to Determine Who Was Harmed and Who Caused Harm

Defendants contend that even if anyone was injured by Agent Orange, plaintifs cannot establish that the harm to any one of them was caused by any individual defendant. It is apparent that present knowledge will not, however favorably construed, support an inference that it is more probable than not that (1) except for chloracne (a skin condition usually of transient effect), a particular plaintiff was injured by Agent Orange rather than some other cause; or (2) any particular defendant's Agent Orange was the herbicide a particular serviceperson came in contact with. Were this a case brought by a single plaintiff against one or more defendants, it probably would have to be dismissed. Because it is a class action, were it not settled, we would probably be constrained to deny such a motion for reasons that appear below. Nonetheless, serious questions of law make ultimate recovery on these theories questionable. These questions are relevant in assessing the reasonableness of the settlement.

1. Facts

While the facts have been set forth in some detail earlier and in other opinions, it is desirable to recapitulate the relevant evidence for purposes of analyzing the law relating to indeterminate plaintiffs and defendants.

The seven chemical company defendants, Dow Chemical Co., Hercules, Inc., The Monsanto Company, Diamond Shamrock Chemicals Corporation, Thompson Chemical Corporation, T.H. Agricultture & Nutrition, and Uniroyal, Inc., manufactured over 99% of a herbicide called Agent Orange used by the military in Vietnam between 1965 and 1970.

The amount of dioxin in the Agent Orange varied from defendant to defendant. There is evidence that it may have averaged less than one part per million (ppm) for some defendants and over 10 ppm for another defendant. Even the least contaminated Agent Orange may have contained enough dioxin to cause chloracne, a skin disease which may leave large permanent scars. It is claimed — but sufficient evidence to support a finding has thus far not been produced — that exposure to dioxin such as that experienced by servicepersons in Vietnam can cause other diseases such as soft tissue sarcoma, a form of cancer, porphyria cutanea tarda, a liver ailment, miscarriage of wives of servicemen, and genetic damage to children of servicemen.

Construing available information most favorably to plaintiffs, it could be found that defendants had known for some years before Agent Orange production began in 1965 that factory workers exposed to dioxin in concentrations of tens of parts per million could develop chloracne, liver damage and other diseases. By 1965 Dow knew that in cases of continuous exposure, dioxin could be hazar-

dous in amounts as low as 1 ppm, which was at that time the lowest level at which dioxin could be readily detected. Dow also arguably knew that dioxin was present in its Agent Orange below the 1 ppm level of sensitity. Although Dow was not aware of all the harmful effects that such amounts of dioxin could produce in humans, based on animal tests it did suspect that dioxin could have deleterious effects even below 1 ppm.

Dow shared this information at a meeting it called in March 1965. Representatives of Hooker Chemical, Hercules, and Diamond Shamrock (then known as Diamond Alkali) were present. Monsanto was invited, but did not attend. Dow told those present at the meeting that it had sampled other companies' herbicides and had found them to contain relatively high levels of dioxin. At the meeting and on a number of subsequent occasions, Dow and other defendants expressed fear that the government, if it learned of the scope of the problem, might intervene in a way disastrous to the entire herbicide industry. By that time herbicides were being used more and more in commercial farming and in other ways profitable to its suppliers. The components of Agent Orange were "shelf items" widely used in commercial applications.

After other defendants acquired information about the hazards of dioxin, they became concerned about regulation and interference with the herbicide industry if the United States was made fully aware of the problem. The defendants also knew of the existence of the vapor phase chromatography (VPC) method for detecting dioxin in Agent Orange which was accurate to 1 ppm. Not all the defendants were familiar with the methodology, but all defendants knew that it existed. All were aware of the fact that precautions in production and in filtering out dioxin

could sharply limit the risk of contamination of the final herbicide.

Each defendant reacted differently to the evidence it had on the dangers of dioxin. Information submitted on summary judgment motion, for example, suggest that Dow and Hercules took steps to reduce dioxin content to below 1 ppm, at that time the threshold for dioxin detection, while Monsanto's and Diamond Shamrock's dioxin levels remained significantly higher.

The government used the Agent Orange to clear vegetation that concealed the military movements of the enemy. It knew of at least some of the health hazards to workers posed by dioxin in large concentrations. There is some evidence that government agencies charged with the purchase and use of Agent Orange were not told by defendants and were not aware that dioxin could be dangerous in concentrations of as low as, or perhaps even below, one part per million., Nor were they, the evidence may show, made aware by the defendants of the sensitive VPC method for detecting dioxin in trace amounts.

Use of herbicides in Vietnam began as early as 1961 at the request of the South Vietnamese government. From 1965, when Agent Orange began to be used there intensively and extensively by United States forces, until 1970 when its use was sharply curtailed, largely out of health concerns, the defendants and the government were in regular communication. The communications concerned the defendants' contracts with the government for Agent Orange production, methods for detecting dioxin, and the government's proposal to build its own Agent Orange production facilities. The government and the plaintiffs argue that the evidence would allow the inference that not until 1970 did the government learn what the defendants

knew in 1965 about the dangers of dioxin in low concentrations and of the VPC method for detecting dioxin.

From 1965 through 1968, the government was pressing the manufacturers to produce as much Agent Orange as possible so that, in effect, the defendants were able to sell to the government as much as they were able to produce. Thus, arguably, defendants were not competing with each other for the government's business and had an incentive not to alert the government to possible dioxin contamination in their product and that of their competitors. Even if defendants are correct that they would have preferred to use their limited facilities for the production of more profitable commercial herbicides, it can be argued that alerting the defense establishment to the full dangers of Agent Orange might have led to limits on the sale of commercial herbicides in the civilian market since the production problems and dangers were much the same.

The Agent Orange produced by the defendants was by government order shipped in fifty-five gallon drums. Under the contract, each drum had an orange stripe on it and a "contract identification number" enabling the government to identify the specific manufacturer. Unlike the equivalent commercial product sold to civilians, the contract called for no warning on the drums about precautions and dangers. The defendant had no control over how the government used the product after it was delivered, although they were aware of how in fact it was used. The drums were sent to a number of central transportation points for shipment to Vietnam. In Vietnam, in preparation for spraying, the drums were drained into large tanks and their contents mixed with those of other drums, making identification of the individual manufacturer's Agent Orange impossible. Even if the Agent Orange had not been mixed, connecting an individual defendant's product

with a person in contact with it would be virtually impossible because of lack of records.

As compared to commercial use of herbicides, the government increased the health risks by (1) spraying in much greater concentrations than recommended by the manufacturers for civilian use, (2) failing to inform users to guard against direct contact with the herbicide, (3) failing to take precautions to warn those who might be exposed to the herbicide, (3) failing to take precautions to warn those who might be exposed to the herbicide, (4) failing to warn those in the area where it was used to avoid contact with vegetation and drinking or bathing in contaminated water or eating contaminated food, and (5) failing to provide sanitary precautions such as showers and fresh clothing and medical attention to those who were exposed.

Members of the armed services were exposed to Agent Orange in a number of different ways. Air Force personnel handled the Agent Orange in preparation for large scale spraying from the air. Hand and mechanical equipment was used locally to clear the perimeter of installations. Troops were exposed to the spraying when they walked and lived in areas with affected vegetation. Some drank water or ate food prepared from crops that had been contaminated with Agent Orange. The exigencies of battle sometimes resulted in fast dumping of large quantities of the herbicide on troops. It is not disputed that the amount sprayed per acre vastly exceeded what would have been used in commercial farming or plant clearing activities by civilians.

2. Law

Plaintiffs have several difficult legal hurdles to overcome. The first results from the conceded inability of any veteran to identify the manufacturer of the herbicide to

which he was exposed. Second, all of the ailments and conditions class members allegedly suffer from, with the possible exception of chloracne, are not unique to Agent Orange or dioxin exposure and occur in the population at large. Thus, even if it is possible to establish by a preponderance of the evidence that some members of the class were injured because it is shown that those diseases occur in a higher percentage of the class members than would be statistically expected, it may be impossible to prove who those members are. Each problem will be analyzed in turn.

a. The Problem of the Indeterminate Defendant

(1) Introduction

This case illusrates the inapplicability of burden of proof rules designed for simple two-party case to mass toxic torts where injury was allegedly caused, but the question of which manufacturer created the harm cannot be answered with precision. Under "traditional" product liability law, to establish a *prima facie* case against any given manufacturer of Agent Orange, a plaintiff would have to prove, by a preponderance of the evidence, the following material propositions: (1) he was injured, (2) the injury was caused by Agent Orange, (3) a defendant had violated some legal duty owed to the plaintiff (as by negligent manufacture of Agent Orange), and (4) the particular Agent Orange causing injury to the plaintiff was manufactured by that defendant.

Plaintiffs concede that because of the way the defendants' herbicides were mixed by the government in Vietnam before spraying no plaintiff would be able to establish the fourth material proposition. As will be seen, this inability is not fatal to their case. Instead, a class of plaintiffs would be able to establish a *prima facie* case by show-

ing, in addition to the first three material propositions, that the manufacturer knew or should have known about the dangers of Agent Orange as it was to be used in Vietnam and that the manufacturer failed to warn the government of those dangers.

Once plaintiffs succeeded in establishing a *prima facie* case, each defendant would assume the burden of establishing the government contract defense. Specifically, a defendant would have the burden of proving one of two material propositions to establish the defense: either that (1) the government knew as much or more of the dangers of Agent Orange as that defendant knew or should have known, or, alternatively, that (2) even if the government had had the knowledge, it would have continued to buy or produce Agent Orange of the same toxicity as that manufactured by defendants and would not have taken steps to reduce Agent Orange hazards to servicepersons. If a defendant failed to establish the government contract defense, it could nonetheless escape liability by showing that its product could not have caused the plaintiffs' injury or, alternatively, that it should only be responsible for a proportion of the damage.

(2) Applicable Law

The question of how to apportion damage among tortfeasors when by independent or concurrent acts or failures to act they have produced indivisible damage has arisen in several contexts. First, defendants act jointly or in a consciously parallel fashion in the performance of a tortious act. *See* (2), (a), Enterprise Liability, *infra*. Second, although there is no concert of action, the independent acts or omissions of several actors concur to produce indivisible harmful consequences; as a variation on this fact

pattern, several defendants acting independently have breached a duty of care to the plaintiff and, although at least one of them actually caused the harm, it is impossible to determine which one. *See* (2), (b), Alternatively Liability and Its Variations, *infra.* Third, defendants independently fail to perform the same duty each owed to the plaintiff. *See* (2), (c), Defendants' Individual Duty to Warn the Government of Dangers, *infra.* As will be seen, courts have developed a number of legal models to hold defendants liable either jointly and severally or by apportioning damages.

In recent years, a fourth fact pattern has arisen similar to the second but differing in one respect. While it can be shown that defendants injured some of a large group of plaintiffs, it is impossible to determine which of the plaintiffs were injured. This could happen, for example, if defendants exposed plaintiffs to a toxic substance that caused the incident of cancer among the plaintiffs to rise significantly above the "background" level of cancers, but it is impossible to determine if the cancer in a particular plaintiff is due to the toxic substance or is part of the "background" cancers. Because of its novel nature, there is not yet a clear judicial response to this fact pattern although, as indicated in the discussion below, current procedural and substantive law can be adapted to meet the challenge. This issue is discussed under IV, B, 2, b, The Problem of the Indeterminate Plaintiff, *infra.*

The applicability of each of these four fact patterns to this case will be examined in turn.

(a) *Enterprise Liability*

(i) *Legal Theory*

Joint or parallel action by defendants in the commission of a tortious act is alleged to be evidenced by defendants'

individual adherence to an inadequate industry-wide standard of safety. By focusing on the safety standard instead of on the cause-in-fact, plaintiffs hope to eliminate the necessity for identifying the individual manufacturer. They allege that each defendant knew of the danger of dioxin contamination and had the ability to detect and reduce the magnitude of its incidence. While they concede that a number of the defendants did make some effort to monitor and reduce the amount of dioxin in their product, they contend that the effort was inadequate given the evidence the defendants had suggesting that even a trace amount of dioxin can have serious effects.

Plaintiffs rely heavily on *Hall v. E.I. DuPont De-Nemours & Co., Inc.*, 345 F.Supp. 353 (E.D.N.Y. 1972). *Hall* applied a variant of the concert of action theory to an entire industry, referring to it as "enterprise liability." In that case plaintiffs were children who had been injured when blasting caps they were playing with exploded. The explosion destroyed the blasting caps, thus making it impossible to identify the manufacturer. Despite the impossibility of identification, defendants' motion to dismiss was denied. The court held that the plaintiffs' allegation of joint knowledge and action in failing to provide a warning label on the blasting caps were sufficient to state a claim for relief.

> Where courts perceive a clear joint control of risk . . . the issue of who "caused" the injury is distinctly secondary to the fact that the group engaged in joint hazardous conduct. . . . Joint control may be shown . . . [by] evidence that defendants, acting independently, adhered to an industry-wide standard or custom with regard to the safety features of blasting caps.

345 F.Supp. at 372-74. The claim of joint control in *Hall* included allegations that defendants had actual knowledge that children were frequently injured by blasting caps and through an industry-wide trade association kept statistics and other information regarding those accidents. The evidence also supported the contention that defendants jointly considered the possibility of putting warning labels on the caps, that they jointly rejected this course of action, and that they jointly lobbied against legislation that would have established such requirements.

The court in *Hall* concluded that

> [i]f plaintiffs can establish by a preponderance of the evidence that the injury-causing caps were the product of some unknown one of the named defendants, that each named defendant breached a duty of care owed to plaintiffs and that these breaches were substantially concurrent in time and of a similar nature, they will be entitled to a shift of the burden of proof on the issue of causation.

Hall, 345 F.Supp. at 380.

In recent years, courts hve been asked to apply a form of the enterprise liability theory to claims brought by daughters of women who ingested DES, a synthetic hormone, while they were pregnant with their daughters. Plaintiffs alleged that as a result of their mothers taking the drug, the daughters developed vaginal cancer or precancerous lesions. Because of the long period of time that elapses between the ingestion of the drug and the manifestation of the symptoms and because DES was manufactured by hundreds of different companies in largely identical form, plaintiffs are usually unable to identify the manufacturer of the particular DES their mothers ingested.

Virtually all courts, while accepting the validity of the enterprise liability theory, have found it inapplicable to the facts of the DES case. They have concluded, first, the fact that hundreds of drug companies entered and left the DES marketplace over the twenty-four years that DES was on the market weakens the assumption that the defendants jointly controlled the risk of injury. This point was recognized in *Hall* when the court noted that, "What would be fair and reasonable with regard to an industry of five or ten producers might be manifestly unreasonable if applied to a decentralized industry composed of thousands of small producers." *Hall v. E.I. DuPont DeNemours & Co., Inc.*, 345 F.Supp. 353, 378 (E.D.N.Y.1972). Second, the assumption of joint control in the DES cases was further weakened because, unlike the situation in *Hall*, the Food and Drug Administration, not members of the industry themselves, formulated the criteria for the testing and marketing of the drug. *See, e.g., Sindell v. Abbott Laboratories*, 26 Cal.3d 588, 607 P.2d 924, 935, 163 Cal.Rptr. 132, 143, *cert. denied*, 449 U.S. 912, 101 S.Ct. 285, 66 L.Ed.2d 140 (1980); *Collins v. Eli Lilly Co.*, 116 Wis.2d 166, 342 NW.2d 37, 47 (1984).

(ii) *Application of Enterprise Liability Theory to This Case*

In one respect, the "Agent Orange" litigation presents an appealing case for the application of enterprise liability in that, like *Hall*, and unlike the DES and asbestos cases, there are only seven producers.

The *sine qua non* of an enterprise liability claim is the joint or parallel action of the defendants. The plaintiffs claim that the parallel action in this case is a deliberate failure on the part of all of the defendants to take adequate steps to reduce the dioxin content of the Agent

Orange to a safe level. It was this parallel action which they urge be viewed as the source of the injury. Plaintiffs misconstrue the parallel action requirement. There appears to be litle doubt that different defendants reacted in different ways when they learned of the dangers of dioxin. Some took steps to lower the dioxin level below the then detectable limit. Others allegedly took no effective action. Plaintiffs' theory confuses the fact that conceivably no defendant took *adequate* action, which is true of most alternative liability cases, with an industry-wide decision to take inadequate action of which they have shown no evidence.

If there was an industry-wide decision, it was taken through parallel action by the defendants in individually deciding not to fully inform the government of the possible dangers posed by low levels of dioxin and in not supplying the government with the more accurate methods they had of dioxin detection. The legal relevance of this fact will be developed in (2), (c), Defendants' Individual Duty to Warn the Government of Dangers, *infra*. It is this alleged failure of any defendant to alert the government to the dangers while profiting from the sale of Agent Orange to the government and by the sale of other herbicides to private persons that constitutes the industry-wide predicate of enterprise liability.

(b) *Alternative Liability and Its Variations*

(i) *Legal Theory*

Plaintiffs also urge variants of the alternative liability theory, developed to apply to a variation of the second of the fact patterns, to wit, two or more defendants have independently breached a duty of care owed to plaintiffs, but it is impossible to determine, as to an individual plaintiff, which one caused the injury.

This model is illustrated by the classic case of *Summers v. Tice, 33 Cal.2d 80, 199 P.2d 1 (1948). In Summers,* two hunters negligently shot in the direction of the plaintiff, but it could not be ascertained which hunter's bullet injured the plaintiff. The problem thus posed is troublesome from a legal standpoint. In the other two of the first three fact patterns, each defendant can be said to have contributed in some fashion or measure to an individual plaintiff's harm. By contrast, in *Summers* it is clear that at least one defendant did not contribute in any measure to the harm. This difference results in a clash between two fundamental principles of tort law: (1) that a plaintiff who was injured by a tortiously acting defendant should be compensated for his injuries and (2) that a defendant should not be held responsible for harm he did not cause.

The court in *Summers* responded to the dilemma by developing a theory of "alternative liability" which is summarized in the Restatement of Torts as follows:

> Where the conduct of two or more actors is tortious, and its is proved that harm has been caused to the plaintiff by only one of them, but there is uncertainty as to which one of them has caused it, the burden is upon each such actor to prove that he has not caused the harm.

Restatement of (Second) of Torts § 433B, subdivision 3 (1965). Under *Summers,* when all defendants, although acting independently, have breached a duty of care toward the plaintiff but only one of them caused the plaintiff's injury, the burden of proof shifts to each defendant to prove that he or she did not cause the injury. Failure to meet that burden results in joint and several liability with other defendants. The logic is simple and compelling: "as between an innocent plaintiff and negligent defendants, the latter should bear the cost of the injury." *Sindell v. Abbott*

Laboratories, 26 Cal.3d 588, 607 P.2d 924, 936, 163 Cal.Rptr. 132, 144, *cert. denied,* 449 U.S. 912, 101 S.Ct. 285, 66 L.Ed.2d 140 (1980).

The cases in which the *Summers-Sindell* approach has been most widely applied are those in which the independent actions of several actors concur to produce indivisible harm. Such cases arise when, for example, plaintiff's automobile is struck by several other automobiles at almost the same time or when plaintiff's land is polluted by several defendants, each acting independently. Once plaintiff proves a breach of duty on the part of a defendant, that defendant is jointly and severally liable for the entire harm suffered by plaintiff and plaintiff need not prove what portion of the total damage, if any, was caused by defendant. *See, e.g., Michie v. Great Lakes Steel Division National Steel Corp.,* 495 F.2d 213 (6th Cir.) (three allegedly polluting defendants can be held jointly and severally liable), *cert. denied,* 419 U.S. 997, 95 S.Ct. 310, 42 L.Ed.2d 270 (1974); *Phillips Petroleum Co. v. Hardee,* 1898 F.2d 205 (5th Cir.1951) (polllution); *Maddux v. Donaldson,* 362 Mich. 425, 108 N.W.2d 33 (1961) (multiple collisions causing indivisible injuries); *Landers v. East Texas Salt Water Disposal Co.,* 151 Tex. 251, 248 S.W.2d 731 (1952) (pollution).

In the pollution and multiple crash cases, the degree to which the individual defendant's actions contributed to an individual plaintiff's injuries is unknown and generally unascertainable. Yet all defendants have been held liable even though an individual defendant may not have caused any injury. *See, e.g., Hackworth v. Davis,* 87 Idaho 98, 390 P.2d 422 (1964) (car crash); *Zulauf v. New York,* 119 Misc.2d 135, 462 N.Y.S.2d 560 (Ct.Claims 1983) (car crash). *See also, e.g., Anderson v. Somberg,* 67 N.J. 291, 338 A.2d 1 (manufacturer, distributor and user of surgical

instrument, the tip of which broke off in the course of surgery and injured plaintiff, all held jointly and severally liable unless a defendant could prove it was not responsible for the injury), *cert. denied,* 423 U.S. 929, 96 S.Ct. 279, 46 L.Ed.2d 258 (1975); *Ybarra v. Spangard,* 25 Cal.2d 486, 154 P.2d 687 (1944) (all those who participated awoke with severely injured shoulder held jointly and severally liable unless a defendant could prove he was not responsible for the injury).

In the last few years courts have been asked to apply alternative liability for a variation of it to claims involving mass exposure to substances that turn out to be harmful. The claims of women who allege they were injured by their mothers' ingestion of DES and of workers who allege they developed various lung diseases as a result of exposure to asbestos are striking examples of this trend. In both situations, plaintiffs are able to prove with a substantial degree of probability that the DES or asbestos caused the injury, but are unable to identify the specific manufacturer of the product which injured him or her.

The DES and asbestos cases in some respects provide a pattern arguing even more strongly for recovery than does the *Summers* fact pattern. In the mass tort cass, unlike the *Summers* situation, dropping the requirement that a plaintiff identify a particular defendant as the cause in fact of his injuries does not undermine the principle that a defendant should only be held responsible for the damage it caused. As long as a plaintiff can prove general causation, i.e., that he was injured by the type of product or substance manufactured by defendants, and as long as there is a rational method for determining the percentage of the total harm caused to all those damaged by each of the possible defendants, the principle remains intact.

Assuming every injured person will sue, looking at the total number of succesful claims each defendant will, at least theoretically, only be held responsible for that part of the damage that it caused to the community. *See, e.g., Sindell,* 607 P.2d at 937, 163 Cal.Rptr. 145; Comment, DES and a Proposed Theory of Enterprise Liability, 46 Fordham L.Rev. 963, 994 (1978). *Cf.* Ball, The Moment of Truth: Probability Theory and Standards of Proof, 14 Vand.L.Rev. 807 (1961); Kaye, The Paradox of the Gatecrasher and Other Stories, 1979 Ariz. St.L.J. 101. The approach becomes particulalry useful when all possible claimants and all possible defendants are joined together in a single suit because then the total damage done to the comunity can be assessed against all wrongdoers at one time. There will be no inconsistent verdicts and procedural and other transactional costs of a complete vindication of plaintiffs' rights become manageable. When there are many individual suits against a changing array of possible malefactors, the costs and the likelihood of inconsistent verdicts make the approach less attractive.

Partially in recognition of the dificulties of proof under traditional tort theory, three of the four highest state courts that have considered the issue in the context of DES claims have applied some form of alternative liability. The one state supreme court that did not apply alternative liability strongly suggested that under the proper circumstances it would accept the theory.

The first state supreme court to address the question was the Supreme Court of California in *Sidnell v. Abbott Laboratories,* 26 Cal.3d 588, 607 P.2d 924, 163 Cal.Reptr. 132, *cert. denied,* 449 U.S. 912, 101 S.Ct. 283, 66 L.Ed.2d 140 (1980). It initially considered the application of "pure" alternative liability as set forth in *Summers v. Tice,* 33 Cal.2d 80, 199 P.2d 1 (1948). The court rejected defend-

ants' contention that *Summers* is only applicable when the defendants have greater access to information about the cause of the injuries than the plaintiff. It noted that this was not true in *Summers* and it concluded "that the fact [that] defendants do not have greater access to information which might establish the identity of the manufacturer of the DES which injured plaintiff does not per se prevent application of the *Summers* rule." *Sindell,* 607 P.2d at 930, 163 Cal. Rptr. at 138. There was, however, a crucial difference between *Summers* and *Sindell* which made *Summers* inapplicable. In *Summers* all those who committed the allegedly tortious act were before the court. By contrast, only five of the approximately 200 drug companies that made DES, and thus allegedly breached their duty of care to plaintiff, were defendants in *Sindell.*

After rejecting the application of the enterprise liability concept, the *Sindell* court adopted a theory of "market share" liability which it called "a modification of the rule of *Summers.*" *Sindell,* 607 P.2d at 936. Under this theory, once the "plaintiff joins in the action the manufacturers of a substantial share of the DES which her mother might have taken," and all the other necessary elements other than causation-in-fact are proven, damages will be apportioned among the defendants by holding "[e]ach defendant . . . liable for the proportion of the judgment represented by its share of [the] market unless it demonstrates that it could not have made the product which caused plaintiff's injuries." *Id.* at 937, 163 Cal.Rptr. at 145. "Under this approach, each manufacturer's liability would approximate its responsibility for the injuries caused by its own products." *Id.*

The next state supreme court to consider the question was the Supreme Judicial Court of Massachusetts in *Payton v. Abbott Labs,* 386 Mass. 540, 437 N.E.2d 171 (1982), upon

certification by the federal district court of the District of Massachusetts. The theory that the plaintiffs urged the court to adopt was identical to the market share theory adopted by the California Supreme Court, with two differences. First, instead of only allowing a plaintiff to recover from the defendants that proportion of her damages that corresponded to a defendant's market share of the DES, plaintiffs asserted that "they should be allowed to recover 100% of their losses from the six named defendants . . . apportioned among named defendants in proportion to each named defendant's share of the DES distributed by all named defendants." *Payton,* 437 N.E.2d at 188-89. Second, plaintiffs also asked the court to "prohibit exculpatory proof, that is, proof by particular defendants that the DES they marketed could not have been ingested, for whatever reason, by a particular plaintiff's mother." *Id.* 437 N.E.2d at 189.

The court stated that "[a]cceptance of this theory of proof would create the risk of holding the named defendants liable in negligence for more harm than they caused. . . . [and] [b]y prohibiting exculpatory proof. . . the plaintiffs would practically ensure that defendants innocent of wrongdoing to a particular plaintiff would be held liable to her." *Id.* Because of these objections, the court refused to adopt the theory suggested by plaintiffs. In summarizing its ruling, however, it stated that

> [we] have indicated . . . that we might permit recovery from those defendants shown to be negligent to the extent of their participation in the DES market, even though the plaintiffs cannot identify the particular source of DES which their mothers ingested.

Id. 437 N.E.2d at 190. Thus the court strongly hinted at its willingess to accept the modification of *Summers* adopted

by the California Supreme Court as long as each defendant is only held liable for the amount of damage it caused to the total population injured by the product.

More recently the Supreme Courts of two more states, Wisconsin and Michigan, have applied some form of alternative liability to DES claims. In *Collins v. Eli Lilly & Co.*, 116 Wis.2d 166, 342 N.W.2d 37 (1984), the Supreme Court of Wisconsin, after applying essentially the same analysis as *Sindell,* adopted a "risk contribution" theory, which is in essence the "market share" theory with two differences. First, plaintiff need only sue one manufacturer of DES, not those representing a "substantial share" of the DES market, so long as that defendant produced or marketed the type of DES taken by her mother. That defendant may then implead other drug companies which it alleges produced or marketed the type of DES taken by plaintiff's mother as third-party defendants. 342 N.W.2d at 49-51. Second, percentage of liability is based on comparative negligence with market share only one of the factors used to make that finding. *Id.* 342 N.W.2d at 53.

Finally, the Supreme Court of Michigan in *Abel v. Eli Lilly & Co.*, 418 Mich. 311, 343 N.W.2d 164 (1984), has also adopted the theory of alternative liability. The Michigan court did not water down the *Summers* requirement that all the alleged tortfeasors be joined as defendants, 343 N.W.2d at 173, but its ruling was potentially even harsher on prospective defendants than the rulings of the California and Wisconsin courts because it held that once all tort-feasors were joined, each may be found jointly and severally liable. Like the Supreme Courts of California and Wisconsin, the Michigan court held that defendants' access to evidence of causation is not a relevant factor for alternative liability:

> [T]he requirements of better access to evidence and its counterpart, exclusive control, are more correctly facets of the doctrine of *res ipsa loquitur*. *See Ybarra v. Spangar,* 25 Cal.2d 486, 154 P.2d 687 (1944); *Anderson v. Somberg,* 67 N.J. 291, 305, 338 A.2d 1 (1975). Even as a factor within that doctrine, the defendant's access to evidence as a controlling consideration has been criticized. *See, e.g.,* Prosser, [Torts (2d ed.)] § 39, p. 225.

343 N.W2d at 174.

The courts of two other states, those of New Jersey and Florida, also have considered the alternative liability question. Two courts in New Jersey have split on the issue: *Namm v. Charles E. Frosst & Co., Inc.,* 178 N.J.Super. 19,427 A.2d 1121 (App.Div.1981), refused to adopt the theory, relying on the fact that not all the manufacturers of the harmful substance, DES, were before the court and the belief that the precedent it found controlling should be modified by the New Jersey Supreme Court, not the Appellate Divison. *Ferrigno v. Eli Lilly & Co.,* 175 N.J.Super. 551, 420 A.2d 1305 (Law.Div.1980), did adopt the alternative liability theory and interpreted the same precedent in a contrary manner.

The Florida Third District Court of Apppeals in *Copeland v. Celotex Corp.,* 447 So.2d 908 (Fla.App. 1984), held that a plaintiff who developed asbetosis need only show that he was exposed to asbestos products in general and join as defendants a substantial number of asbestos manufacturers who marketed asbestos products during the time of his exposure. Liability would be apportioned on the basis of national market share.

Federal courts have split in making *Erie*-based predictions as to whether their forum state's courts would adopt

an alternative liability or market share theory. *Compare, e.g., McElhaney v. Eli Lilly & Co.*, 564 F.Supp. 265 (D.S. Dak.1983) (predicting that South Dakota would adopt alternative liability in asbestos case), *rev'd on other grounds*, 681 F.2d 334 (5th Cir.1982), *with Morton v. Abbott Laboratories*, 538 F.Supp. 593 (M.D.Fla.1982) (predicting, prior to *Copeland v. Celotex Corp.*, 447 So.2d 908 (Fla.App.1984), that while Florida may adopt alternative liability, it would not adopt market share liability) *and Ryan v. Eli Lilly & Co.*, 514 F.Supp. 1004 (D.S.C.1981) (predicting that South Carolina would not follow *Sindell*).

None of the courts rejected alternative liability when all the defendants were before the court. On the contrary, they emphasized that what they found most objectionable about *Sindell* is the fact that all defendants may be held liable "despite the possibility that no defendant [before the court] caused the injury." *Morton v. Abbott Laboratories*, 538 F.Supp. 593, 599 (M.D.Fla.1982). *See also Tidler v. Eli Lilly & Co.*, 95 F.R.D. 332, 335 (D.D.C.1982) ("There is some indication that the District of Columbia courts might accept the theory of alternative liability . . . where *all* possible manufacturers . . . are . . . joined.").

(ii) *Application of Alternative Liability to this Case*

Defendants object to use of alternative liability precedents on several grounds. They contend first, that the reasoning of those state supreme courts that have imposed liability in the DES cases has been rejected by a number of federal courts that have, under *Erie*, attempted to foretell what their forum states' courts would do. Second, they argue that even if some form of alternative liability is to be generally accepted, there are critical differences between the DES cases and this litigation which make any variation of that theory inapplicable. Each of these objections will be detailed and addressed in turn.

As to the first objection, defendants cite *Ryan v. Eli Lilly & Co.*, 514 F.Supp. 1004 (D.S.C.1981); *Mizell v. Eli Lilly & Co.*, 526 F.Supp. 589 (D.S.C.1981), and the other federal district court cases noted above that have refused to follow *Sindell.* They also cite a number of federal court decisions that have, in the context of the asbestos litigation, rejected an alternative-liability type theory. Defendants read too much into those cases. A number of the decisions they cite reject a *Summers*-type approach in large part because the plaintiff was able to identify some of the manufacturers of the products to which he was exposed. *See, e.g., Thompson v. Johnn-Manville Sales Corp.*, 714 F.2d 581, 583 (5th Cir.1983) (*Sindell* will not be applied "where a large group of defendants whose products [the plaintiff] did recall using remain before the court"), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1598, 80 L.ED.2d 129 (1984); *In re Related Asbestos Cases,* 543 F.Supp. 1152, 1158 (N.D.Cal.1982) (same). Other courts have refused to apply the doctrine because of other differences between *Sindell* and the case at bar which do not apply here. *See, e.g., Hannon v. Waterman Steamship Corp.*, 567 F.Supp. 90, 92 (E.D.La.1983) ("defining the relevant product and geographic markets [for *Sindell* market share liability] would be an extremely complex task due to the numerous uses to which asbestos is put, and to the fact that some of the products to which the plaintiffs were exposed were undoubtedly purchased out of state sometime prior to the plaintiffs' exposure,' " quoting *In re Related Asbestos Cases,* 543 F.Supp. 1152, 1158 (N.D. Cal.1982)). *See also Starling v. Seaboard Coast Line Railroad Co.*, 533 F.Supp. 183, 191 (S.D.Ga.1982) (citations and footnotes omitted):

> Courts have noted significant differences between the marketing and use of asbestos products and the manner in which DES pills were

> marketed so that perhaps only the exceptional plaintiff in asbestos actions will be deprived of a remedy. . . . [T]he likelihood that either the asbestos manufacturers or the purchasers have maintained invoice records denoting whose products were used at a specific work site is much greater [than in DES cases]. Moreover, the plaintiff need not determinatively prove which producer's asbestos caused his injury. A *prima facie* case is shown if the plaintiff can prove that he was exposed to the defendant's products on at least one occasion.

Defendants' second contention is that notwithstanding the possible acceptance in principle of some variation of an alternative liability theory, there are crucial differences between other cases that have applied alternative liability and the *"Agent Orange"* litigation. They contend that in order for *Sindell* to apply the causal connection between the defendants' acts and the harm must be undisputed, as they claim it is in the DES cases and as it was in *Hall* and in *Summers*. As a variation on this point, defendants contend that, despite the fact that all the manufacturers are before the court, not all the potential tortfeasors are before the court since here are substances other than Agent Orange to which plaintiffs were exposed that defendants claim could have acted together with Agent Orange to cause the injuries suffered by plaintiffs. *Cf. Starling v. Seaboard Coast Line Railroad Co.*, 533 F.Supp. 183, 191 (S.D.Ga. 1982) ("The injuries caused by asbestos exposure are not restricted to asbestos products – other products . . . may have caused or contributed to the injury."). For example, defendants point to dapsone, an anti-malarial drug given to American sevicepersons in Vietnam, which is a suspected carcinogen, as a far more likely source of cancer than Agent Orange.

There are several procedural and substantive factors unique to this litigation that blunt the force of defendants' contentions and justify the application of a modified burden-shifting theory to this case while holding each defendant liable only for the damage that plaintiffs can prove that it caused. In the instant case not only are virtually all producers of the allegedly harmful substance before the court, but because this is a class action, so are almost all persons allegedly injured who could now be before an American court. Because of these unique facts the *Agent Orange"* litigation is a far more appealing case for the application of some form of alternative liability than are the DES cases.

As the Supreme Court of Wisconsin pointed out in rejecting "pure" market share liability, there is a severe

> practical difficulty [in] defining and proving market share [of DES] . . . Even assuming that some drug companies have records, the fact finder still may not be able to compose an accurate assessment of the total market of which those companies were a part. There are several reasons for this: The DES market apparently was quite fluid, with companies entering and leaving the market over the years; some companies no longer exist and some that still exist may not have relevant records; and apparently there are no accurate nationwide records pertaining to the overall production and marketing of DES. We view defining the market and apportioning market share as a near impossible task if it is to be done fairly and accurately in order to approximate the probability that a defendant caused the plaintiff's injuries.

Collins v. Eli Lilly & Co., 116 Wis.2d 166, 342 N.W.2d 37, 48 (1984).

The situation here is in stark contrast to the one described in the *Collins* case. The market for Agent Orange was not "fluid," companies were not "entering and leaving the market over the years," relevant detailed records exist for all the companies and there are accurate records pertaining to the overall production and marketing of Agent Orange. If general causation were proven it would be possible for a jury to apportion damages so that a defendant would only be held responsible for the injury it could reasonably be said to have caused to all servicepersons. Thus, if an alternative-liability-type theory is justified in DES, it is even more justified in the *Agent Orange"* litigation despite the lack of certainty as to causation. Furthermore the likelihood that a *particular* manufacturer contributed to a plaintiff's injury is increased because the herbicides of many manufacturers were mixed together and because many plaintiffs were repeatedly exposed to Agent Orange.

The power of defendants' objections are further attenuated when it is realized that while it makes sense to require that the manufacturers of all potentially causal agents be joined when, as in the DES cases, it is within plaintiff's power to do so, it does not necessarily follow that this requirement should be retained when, as here, it is not within plaintiff's power. For example, defendants contend that one possible carcinogen to which plaintffs were exposed was aflatoxin, a rice fungus occurring naturally in Vietnam. It is obviously impossible to join as defendants the Vietnamese peasants whose rice contained the aflatoxin. Furthermore, to the extent that the other toxic agents acted not independently, but synergistically with Agent Orange, defendants' argument is without merit; if the manufacturers of the Agent Orange are joint tortfeasors with the other causative agents, they may be entitled to implead the manufacturers of those agents, if

possible, but they are not entitled to a judgment in their favor if they cannot. Finally, and most importantly as developed more fully in the next section on Duty to Warn, the evidence may show that defendants should be estopped from asserting the inabililty to identify a particular defendant's connection to a particular plaintiff to bar a plaintiff's claim.

(c) *Defendants' Individual Duty to Warn the Government of Dangers*

(i) *Duty to Warn of Dangers of Their Own Product*

It was noted above that plaintiffs may be able to show that there was an understanding among the manufacturers to keep the government "in the dark" about the dangers of trace amounts of dioxin because, in the words of one contemporaneous memorandum by a defendant, "they [were] fearful of a Congressional investigation and excessively restrictive legislation on manufacture of pesticides which might result." Internal memorandum of Hercules, Inc., dated July 12, 1965. If a manufacturer did know of possible health hazards associated with Agent Orange and stood idly by while the government, with the knowledge of that manufacturer, combined its product with that of other manufacturers in such a way as to make identification impossible, the manufacturer should not be allowed to take advantage of the consequences of silence to bar a suit against it.

The same reasoning applies even if a manufacturer was only negligent, not deliberate, in its silence. If a manufacturer negligently supplied a harmful product with the knowledge that it would be mixed and sprayed in a mixture so that its product would no longer be separately identifiable, that manufacturer may have been negligent in

allowing the destruction of the evidence that would have enabled a plaintiff to identify it. In the words of one court, "we base joint liability here on concurrent failure to do that which would have supplied the knowledge necessary to determine actual liability." *Transamerica Insurance Co. v. Diplomat Parking Corp.*, 282 A.2d 564, 566 (D.C.App. 1971). *Cf. Haft v. Lone Palm Hotel*, 3 Cal.3d 756, 478 P.2d 465, 476, 91 Cal.Rptr. 745, 756 (1970) (motel that failed to provide a lifeguard for pool or to post sign warning that none was on duty had burden of proving that decedents would have drowned even if those precautions had been taken; "defendants may . . . appropriately be designated at 'fault' for the factual deficienies that are present"). Contrast, in the DES case, "there [was] nothing inherent in the conduct of defendants or in the manufacture of DES which creates [a] 'complexity of identification,' " and therefore no justification for using an estoppel theory. *Namm v. Charles E. Frosst & Co.*, 178 N.J.Super. 19, 427 A.2d 1121, 127 (App.Div.1981).

The relevance of the point just made to the application of burden-shifting theory is that it would bring this case within the third fact pattern described: defendants each owe a duty to a plaintiff and each fails to act on that duty. Here, it is urged that each defendant had a duty to warn the United States of the dangers of Agent Orange and each failed to do so. The failure not only made it impossible for a plaintiff to identify the origin of the herbicide that injured him, but arguably was a proximate cause of his injuries.

It is an accepted principle of product liability law that when a manufacturer, through his negligent acts, exposes a consumer to possible harm, he breaches his duty of care to that person twice: first, by exposing him to the risk

of harm and a second time by failing to tell him of that harm so that the person can either take steps to avoid the risk or make an informed decision to accept it. *Tingey v. E.F. Houghton & Co.*, 30 Cal.2d 97, 179 P.2d 807 (1947); Restatement (Second) of Torts §§ 389-99 (1965).

Ordinarily it is the harm caused by a particular manufacturer's product that provides the causal link between the breach of the duty to warn and a plaintiff's injury. The situation is different, however, when a consumer purchases a functionally identical, fungible product intended to be mixed in a way that destroys identification from several manufacturers, all of whom fail to warn the consumer of a danger that is common to the product of all.

In an "ordinary" product liability suit a defendant may have an argument that the manufacturer of the product that actually injured the plaintiff should be primarily liable for the plaintiff's injury, rather than the manufacturer who, although it made a dangerous product and breached its duty to warn, did not make the product that caused the harm. Where, however, as here, it is impossible to determine who made the injury-causing product and where that impossibility was "inherent in the conduct of defendants," *Namm v. Charles E. Frosst & Co.*, 78 N.J.Super. 19, 427 A.2d 1121, 1127 (App.Div.1981), each manufacturer's failure to warn may be viewed as a legal cause of the user's injury although the cause-in-fact of the injury may have been the product of another.

At the very least, the failure to warn justifies shifting to an individual defendant the burden of negating causation-in-fact. *Cf. Transamerica Insurance Co. v. Diplomat Parking Corp.*, 282 A.2d 564 (D.C.App.1971) (where customer's automobile was stolen from garage operated by

insured near time at which coverage was changed from one insurer to another, time of loss could not be established precisely enough to fall within either coverage, and neither insurer had availed itself of the right to inspect the premises at the time coverage changes, liability was apportioned between insurers). For the purpose of this analysis, it makes no difference whether the injury was suffered by the purchaser (here the government) or a third party (here a member of the armed forces, spouse or child).

By way of contrast, in the DES case each consumer purchased her DES from only one or at most, a few of the manufacturers, and therefore was owed no duty by the other manufacturers. *Cf. Carrier v. Riddell, Inc.*, 721 F.2d 867 (1st Cir.1983) (defendant manufacturer owed no duty to warn the plaintiff, who purchased another manufacturer's football helmet, of dangers common to the helmets of both companies despite the fact that the manufacturer was negligent in not warning the high school football team of which the plaintiff was a member).

This argument assumes, of course, that there was a danger from that particular manufacturer's product, i.e., that it contained sufficient dioxin to cause the injury. In the next section, (ii), Duty to Warn of Dangers of Another's Product, we address the problem of a manufacturer whose product did not contain a dangerous amount of dixoin.

Defendants do not contend, and are in no position to contend, that they are not liable because no individual defendant's failure to warn was a "but for" cause of the injury since if any of them had warned the government, the bell would have tolled for all. Concurrent tortfeasors do not have the luxury of the "but for" argument. *See, e.g., Anderson v. Mineapolis, St. P. & SS. M. R.R. Co.*, 246

Minn. 430, 179 N.W. 45 (1920); *Kingston v. Chicago & N.W. R. Co.*, 191 Wis. 610, 211 N.W. 913 (1927).

(ii) *Duty to Warn of Dangers in Another's Product*

Plaintiffs ask that we go further and hold that even if it is proven that a defendant's product was "clean' that defendant should be held liable for failing to warn the government about the dangers of the high level of dioxin contained in another defendant's product. Plaintiffs admit that the imposition of such a duty to warn of the negligence of others is highly unusual but they contend that it is justified by the facts of this litigation.

Tort law has always sharply distinguished between feasance nad nonfeasance: while a defendant nearly always has a duty not to injure another person, it is rare for the law to impose a duty on a defendant to *prevent* injury to another person. The latter duty has generally been imposed only where there is "some definite relation between the parties, of such a character that social policy justifies the imposition of a duty to act." W. Prosser, Handbook of the Law of Torts, 339 (1971). As may be surmised from Dean Prosser's dscription, duties are not discoverable facts of nature; the word "duty" merely certifies the legal conclusion that liability ought to exist.

In deciding whether a defendant has a duty and, if so, what the scope of that duty is, it is useful to remember that the question is not one susceptible of broad generalizations. Rather it is one that must be decided on a case-by-case basis "after a full facual presentation and analysis of applicable law." *Hall v. E.I. DuPont DeNemours & Co., Inc.*, 345 F.Supp. 353, 366 (E.D.N.Y.1972).

In the product liability field a duty to warn or to furnish a safe product is often imposed on a defendant despite the fact that it did not produce the component or product that injured the plaintiff. This duty is commonly imposed on wholesalers and retailers who are held liable for supplying a defective product despite the fact that they did not cause the defect in question. *See, e.g., Greenberg v. Lorenz,* 9 N.Y.2d 195, 213 N.Y.S.2d 39, 173 N.E.2d 773 (1961); *Henningsen v. Bloomfield Motors, Inc.,* 32 N.J. 358, 161 A.2d 69 (1961); Restatement (Second) of Torts, § 402A (1965). Among the factors considered relevant in the imposition of such a duty are (1) the distributor's "integral [role in] the overall producing and marketing enterprise [which justifies its] bear[ing] the costs of injuries resulting from defective products," *Vandermark v. Ford Motor Co.,* 61 Cal.2d 256, 262, 391 P.2d 168, 171, 37 Cal.Rptr. 896, 899 (1964); "(2) the participants' capabilities of promoting the requisite safety in the risk-creating process; (3) the need to protect the consumer, both in terms of ascertaining responsible parties and providing compensation; and (4) the participant's ability to adjust the costs of liability among themselves in a continuing business relationship." *Hall v. E.I. DuPont DeNemours & Co., Inc.,* 345 F.Supp. 353, 375 (E.D.N.Y. 1972) (analyzing *Vandermark*).

To put the criteria in somewhat more general terms, the question is whether the magnitude of the risks, the defendant's role in creating the risk and its ability to avoid or spread the costs of the liability justify the imposition of the duty. The judicial response is that as to the retailer and wholesaler, they do. In some respects that duty is more onerous than the duty plaintiffs urge be imposed on the defendants here in that the distributor is liable despite the fact that usually it is impossible for a distributor to discover

the defect before a customer is injured. By contrast here the plaintiffs contend the defendants were at least aware of the fact that their comanufacturers' products contained dioxin. Unlike the average retailer or wholesaler, they each had access to research, testing and experts' advice normally associated with the production of complex chemicals; many of them also had years of experience producing 2,4-D and 2,4,5-T, the components of Agent Orange.

Defendants seek to distinguish the line of cases noted above by pointing out that in all of the cases in which a defendant was found liable, that defendant was a necessary link in the defective product's reaching the consumer, whether as a producer, distributor, or assembler. *See, e.g., Brizendine v. Visador Co.*, 437 F.2d 822 (9th Cir.1970) (glass manufacturer held liable when it knew or should have known that strength B glass was unsafe for use in doors in high traffic areas and supplied such glass to frame manufacturers with knowlege that glass would be used for doors and that the frame manufacturers did not know of the dangers); *State Steamship Co. v. Stone Manganese Marine, Ltd.*, 371 F.Supp. 500 (D.N.J.1973) (manufacturer of alloy ingots could be held liable if alloy was inadequate for casting into propeller although casting and installation were done by third party). By contrast, if the product was not in some way the defendant's own, the courts have uniformly found no liability. *See, e.g., Carrier v. Riddell, Inc.*, 721 F.2d 867 (1st Cir.1983). Similarly, here, they argue, a defendant should not be held responsible for defects in a product it did not make.

Intead of analogizing to the case of the distributor or the component manufacturer, the defendants find the analogy to the "good samaritan rule" apt. The common law's extreme reluctance to impose on an "innocent" bystander a duty to rescue someone in peril even if the rescue would in-

volve little or no risk to the rescuer is not only well known but it is notorious. *See, e.g., Handiboe v. McCarthy,* 114 GA.App. 541, 151 S.E.2d 905, 907 (1966) (no duty to rescue 4-year-old seen drowning in pool); *Sidwell v. McVay,* 282 P.2d 756 (Okla.1955) (no duty toward neighboring child hammering upon explosives); W. Prosser, Handbook of the Law of Torts, 340 (1971); Ames, Law and Morals, 22 Harv.L.Rev. 97, 113 (1908); D'Amato, The "Bad" Samaritan Paradigm, 70 N.W.L.Rev. 798 (1975); Rudolf, The Duty to Act: A Proposed Rule 44 Neb.L.J. 499 (1965); Seavey, I Am Not My Guest's Keeper, 13 Vand.L.Rev. 699 (1960). Similarly here they argue a commercial manufacturer does not have a duty to warn of the dangers it should have known existed in a competitor's product.

Plaintiffs respond by pointing out that the defendants in this case are readily distinguishable from the innocent bystanders of the good samaritan cases and from the defendant in *Riddell,* a manufacturer of a mass market product for the individual consumer who failed to warn a consumer of the dangers of the product of another manufacturer. This case concerns a specialized product that had one consumer, the United States, and seven manufacturers who produced virtually all of the product. The potential dangers, in terms of both the hazards to the individual and the number of people potentially affected, were enormous and, in some respects, unprecedented. *Cf. Hall v. E.I. DuPont DeNemours & Co., Inc.,* 345 F.Supp. 353, 366 (E.D.N.Y.1972) ("[w]here the foreseeable risks of a product's use are sufficiently serious – particularly to large numbers of people – courts have not hesitated to require manufacturers to face substantial costs in warnings, testing, inspection and safety design"). The allegedly dangerous substance, dioxin, was not unique

to the "dirty" manufacturers, but was, plaintiffs contend they can show, present in each manufacturer's product to some extent. It was a substance about whose dangers, plaintiffs, urge, the manufacturers communicated regularly with the government and among themselves. Each defendant knew that its product would be comingled in use and, hence, contaminated by products that had varying amounts of dioxin. For most of the time Agent Orange was being produced in largest quantities, i.e., between late 1965 and December 1968, the defendants were not seriously in competition with each other for the Agent Orange market since the government was buying all that they could produce. The government was so anxious to get as much of the product as it could that it apparently compelled the defendants to produce the herbicide under the Defense Production Act.

In addition to the legal implications of the great potential hazards to third persons who could not possibly protect themselves, it is worth noting that each defendant arguably benefited by an implied conspiracy of silence. Had any one of them warned that some Agent Orange contained hazardous amounts of dioxin, the Agent Orange program might well have been terminated at once, causing lost profits even to those producing a "clean" product. More important, the danger of a scandal that might have reduced sales of commercial herbicides or caused the government to take strong action to regulate the industry was substantial; a number of the defendants expressed such fears themselves. Each defendant thus gained by its silence. The "good samaritan" rule cannot block assigning a duty to warn to a manufacturer who stands to benefit substantially if the warning is not given.

In sum, there is a good deal of merit to the contentions

of both sides. On the one hand, the unique facts of this case call for some modification of the general rule that a manufacturer has no duty to warn of the dangers of another's product. On the other hand, it is harsh to hold a manufacturer liable for its failure to warn of dangers it may not have been sure existed in a comanufacturer's herbicide.

The fairest solution appears to be the application of a rule of law unique to this case as follows: A manufacturer of Agent Orange who was or should have been aware of the dangers posed by its product or the product of another manufacturer whose product was to be combined with its own had a duty to warn the prime purchaser who combined the products, the United States, of the dangers inherent in the combination. If a plaintiff could show that a manufacturer failed in that duty, the burden would shift to that defendant to prove by a preponderance of the evidence that its product could not have caused plaintiff's injury because its product could not cause the type of injury which the plaintiff suffers.

Given the heavily statistical nature of the proof and the way in which the United States combined the products of the various manufacturers, the burden would be a difficult one to meet. It is far easier to ascertain whether Agent Orange in the generic sense was hazardous than it is to determine if a specific manufacturer's Agent Orange was dangeorus. Yet, unlike the *Summers* and most DES fact patterns, such a burden shifting will not automatically result in a defendant's liability; it merely prevents a defendant from hiding behind its negligence and silence to avoid liability. Moreover, each manufacturer should be in a position to show, if that is the case, that its product contained no dioxin in harmful concentrations.

Although, because of the unique facts of this litigation, there are no precedents directly on point, a burden shifting rule is consistent with a recent expansion of a defendant's duty to warn a plaintiff of, and protect him from, the actions of third parties. Courts now hold that duty to warn arises when one should realize through special facts within his knowledge or a special relationship that an act or omission exposes another to an unreasonable risk of harm through the conduct of a third party. Restatement (Second) of Torts § 302B and comments (1965). *See, e.g., Indian Towing Co. v. United States,* 350 U.S. 61, 76 S.Ct. 122, 100 L.Ed. 48 (1955) (duty to provide lighthouse because of known navigational hazards); *United States v. Muniz,* 374 U.S. 150, 83 S.Ct. 1850, 10 L.Ed.2d 805 (1963) (duty to protect a prison inmate from other inmates). *See also Johnson v. California,* 69 Cal.2d 782, 447 P.2d 352, 73 Cal.Rptr. 240 (1968) (holding state liable for placing a minor with homicidal tendencies in plaintiff-victim's home).

As the cases cited demonstrate, this expansion of duty has taken place in both the commercial and the noncommercial areas. It is still the rule that "[i]f a defendant's relation to the damage stems primarily from the fact that he could have prevented it or rescued the victim by doing something rather than nothing, he is not held to a duty to take reasonable care, absent special circumstances. *See* Restatement (Second) of Torts, § 314 (1965); Prosser, Handbook of the Law of Torts (1971) 338-350." *Equilease Corp. v. Smith International, Inc.,* 588 F.2d 919, 928 (5th Cir.1979). Courts, however, are increasingly willing to find such "special circumstances" based on the gravity of the danger, the specificity of the knowledge, the nature of the relationship between the defendant, the third party and the plaintiff, or a combination of these factors.

See, e.g., Caldwell v. Bechtel, Inc., 631 F.2d 989 (D.C. Cir. 1980) (contractual authority vested in consultant engineering firm with respect to jobsite safety regulations created special relationship between firm and heavy equipment operator working at site such that firm owed duty to operator to take reasonable steps to protect him from foreseeable risks to his health posed by dust laden tunnel); *Hopkins v. Chip-in-Saw, Inc.*, 630 F.2d 616 (8th Cir.1980) (if manufacturer can reasonably foresee that warnings given to a purchaser of its product will not be adequately conveyed to ultimate users of the product, its duty to warn may extend beyond purchaser to those persons foreseeably endangered by product's use); *Tarasoff v. Regents of the University of California*, 17 Cal.3d 425, 551 P.2d 334, 131 Cal.Rptr. 14 (1976) (therapist has a special relationship with his patient such that when the therapist knows of the patient's intention to harm the victim, therapist has a duty to warn that person).

(d) *Summary*

As indicated in this opinion, IV, C, Nature of Liability and Relation to Defense of Government Knowledge, *infra*, the applicable rule of substantive law *in this class action* is as follows: if a plaintiff established that it is more probable than not that (1) he or she was injured, (2) the injury was caused by Agent Orange, (3) a defendant knew or should have known about the dangers of Agent Orange, whether manufactured by it or by a comanufacturer, as it was to be used in Vietnam and failed to warn the United States of those dangers, and (4) the defendant manufactured and sold to the United States Agent Orange to which plaintiff might have been exposed, *then* that defendant would be jointly liable for the damage suffered by the plaintiff, *unless* the defendant established that it is more

probable than not that (5) ~~the~~ Agent Orange it sold to the United States could not have caused the injury (e.g., because it contained no harmful substance). If a defendant could not prove (5), it might nonetheless escape liability if it could show either that (6) the United States knew as much as it knew or should have known about the dangers of Agent Orange or (7) even if the United States had known as much as that defendant knew or should have known, it would have nevertheless produced or continued to buy Agent Orange of the same toxicity as that supplied by defendant and would not have taken steps to reduce its hazards to the plaintiff.

If a plaintiff succeeded in establishing a *prima facie* case and a defendant failed to establish any of material propositions five through seven, that defendant would be jointly and severally liable with all other defendants similarly situated unless it could show why it should only be liable for a portion of the damage (e.g. because of the percentage of Agent Orange supplied or the relative purity of its product) and, thus, should pay only a proportion of plaintiff's damages.

b. The Problem of the Indeterminate Plaintiff

The preceding discussion assumed that although a plaintiff would be unable to identify the manufacturer of the Agent Orange to which the veteran was exposed he or she would be able to prove, by a preponderance of the evidence, that the specific injuries from which he or she suffers were caused by Agent Orange. It is likely, however, that even if plaintiffs as a class could prove that they were injured by Agent Orange, no individual class member would be able to prove that his or her injuries were caused by Agent Orange. For example, plaintiffs as a class may be

able to show that statistically, X% of the population not exposed to Agent Orange could have been expected to develop soft-tissue sarcoma, but that among those veterans who were exposed to Agent Orange, X + Y% suffer from soft-tissue sarcoma. If Y is equal to or less than X and there is no meaningful "particularistic" or anecdotal proof as to the vast majority of plaintiffs, virtually no plaintiff would be able to show by a preponderance of the evidence that his or her cancer is attributable to the Agent Orange rather than being part of the 'background' level of cancer in the population as a whole. The probability of specific cause would necessarily be less than 50% based upon the evidence submitted.

(1) Scope of the Problem

The problem just noted is one that has received a significant amount of scholarly discussions as well as some attention from the United States Congress, *See, e.g.*, Rosenberg, The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System, 97 Harv.L.Rev. 849 (1984); Black and Lilienfeld, Epidemiological Proof in Toxic Tort Litigation, 52 Fordham L.Rev. 732, 782-83 (1984); Dore, A Commentary on the Use of Epidemiological Evidence in Demonstrating Cause-in-Fact, 7 Harv.Envtl.L.Rev. 429 (1983); Delgado, Beyond *Sindell*: Relaxation of Cause-in-Fact Rules for Indeterminate Plaintiffs, 70 Cal.L.Rev. 881 (1982); Proposed Radiogenic Cancer Compensation Act of 1983, S.921, 98th Cong., 1st Sess., 129 Cong. Rec. S.3918 (daily ed. March 24, 1983). Because of the rarity of the situation until recently scant attention has been given to the issue by the courts. There has apparently been only one other mass exposure decision that has discussed the indeterminate plaintiff problem explicitly, *viz*, *Allen v. United States*, 588

F.Supp. 247 (D.Utah 1984), a case where injury was claimed as a result of radiation exposure from testing of atomic explosive devices.

In our complex industrialized society it is unfortunately possible that some products used on a widespread scale will cause signifcant harm to the public. While it may be possible to prove, through the use of such proof as laboratory tests on animals and epidemiological evidence, that such harm – for example cancer – can be "caused" by a particular substance, it may be impossible to pinpoint which particular person's cancer would have occurred naturally and which would not have occurred but for exposure to the substance.

> Epidemiological statistics, which constitute the best (if not the sole) available evidence in mass exposure cases, can only attribute a proportion of the disease incidence in the population to each potential source. . . . But . . . it is impossible to pinpoint the actual source of the disease afflicting any specific member of the exposed population.

Rosenberg, The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System, 97 Harv.L.Rev. 849, 856-57 (1984) (footnotes omitted).

In two of the largest and most widely publicized mass tort ligitations, those involving DES and asbestos, the problem outlined above does not pose a serious obstacle since at least some of the damage caused by the harmful substance was, it has been claimed, unique to that substance. Adenosis and clear cell adenocarcinoma of the vagina and uterus, the conditions associated with DES, are, it is said, almost unknown among women whose mothers had not taken DES. Note, DES and a Proposed

Theory of Enterprise Liability, 46 Fordham L.Rev. 963, 965 (1978). The situation is similar, in the asbestos litigation, albeit to a lesser extent. Although lung cancer is associated with cigarette smoking and other factors as well as asbestos exposure and mesothelioma may have causes other than asbestos, *see Stanton & Wrench,* Mechanisms of Mesothelioma Induction With Asbestos and Fibrous Glass, 48 J.Nat'l Cancer Inst. 797, 811-15 (1972), asbestosis is alleged to be uniquely associated with asbestos exposure. *Borel v. Fibreboard Paper Products Corp.,* 493 F.2d 1076, 1083 (5th Cir. 1973), *cert. denied,* 419 U.S. 869, 95 S.Ct. 127, 42 L.Ed.2d 107 (1974). In most other mass exposure cases, however, the harm caused by the toxic substance is indistinguishable from the naturally occurring disease or condition. *See* Dore, A Commentary on the Use of Epidemiological Evidence in Demonstrating the Cause-In-Fact, 7 Harv.Envtl.L.Rev. 429, 437 (1983); Solomons, Workers' Compensation for Occupational Disease Victims: Federal Standards and Threshold Problems, 41 Alb.L.Rev. 195, 199 (1977).

The recent case of *Allen v. United States,* F.Supp. 247 (D.Utah 1984), illustrates the problem well. Plaintiffs claimed that they developed various forms of cancer as a result of their exposure to radiation from nuclear explosions. While some forms of cancer can, it is contended, with some certainty be attributed to factors other than exposure to radiation, many others "cannot be distinguished from cancer of the same organ arising from . . . unknown causes". i.e., the 'background' cancers. J. Gofman, *Radiation and Human Health* 59 (1981), quoted in *Allen v. United States,* 588 F.Supp. at 406. The statistical evidence in *Allen* apparently made it clear that there was a strong positive association between exposure to low-level ionizing radiation, presumably the result of atomic explosions, and

various forms of cancer suffered by plaintiffs. Thus, the *Allen* case has some of the characteristics of the DES and asbestos cases in addition to persuasive statistical correlations.

(2) Preponderance Rule

Even if there were near certainty as to general causation, if there were significant uncertainty as to individual causation, traditional tort principales would dictate that causation be determined on a case-by-case basis using the preponderance-of-the-evidence rule. *Santosky v. Kramer,* 455 U.S. 745, 755, 102 S.Ct. 1388, 1395, 71 L.Ed.2d 599 (1982); W.Prosser, Handbook of the Law of Torts, 208-09 (1971); Kaplan, Decision Theory and the Fact Finding Process, 20 Stan.L. Rev. 1065, 1072 (1968). The rule provides an " 'all or nothing' approach, whereby [assuming all other elements of the cause of action are proven], the plaintiff becomes entitled to full compensation for those . . . damages that are proved to be 'probable' (a greater than 50 percent chance), but is not entitled to any compensation if the proof does not establish a greater than 50 percent chance." *Jackson v. Johns-Manville Sales Corp.,* 727 F.2d 506, 516 (5th Cir. 1984).

Under the "strong" version of the preponderance rule, statistical correlations alone indicating that the probability of causation exceeds fifty percent are insufficient; some "particularistic" or anecdotal evidence, that is, "proof that can provide direct and actual knowledge of the causal relationship between the defendant's tortious conduct and the plaintiff's injury," is required. Rosenberg, *supra,* 97 Harv.L. Rev. at 857, 870. *See Ryan v. Eli Lilly & Co.,* 514 F.Supp. 1004 (D.S.C. 1981), *Namm v. Charles E. Frosst & Co.,* 178 N.J. Super. 19, 427 A.2d 1121 (App.Div. 1981). As Professor Jaffe has put it,

> If all that can be said is that there are 55 chances of negligence out of 100, that is not enough. There must be a *rational,* i.e., evidentiary basis on which the jury can choose the competing probabilities. If there is not, the finding will be based . . . on mere speculation and conjecture.

Jaffee, Res Ipsa Loquitur Vindicated, 1 Buffalo L.Rev. 1, 4 (1951). The "weak" version of the preponderance rule would allow a verdict solely on statistical evidence; the 'all-or-nothing" approach converts the statistical probability into a legally absolute finding that the causal connection did or did not exist in the case. C. McCormick, Handbook on the Law of Damages, 118 (1935). The justification for not requiring "particularistic" or anecdotal evidence is trenchantly and accurately stated by Professor Rosenberg:

> [T]he entire notion that "particularistic" evidence differs in some significant qualitative way from statistical evidence must be questioned. The concept of "particularistic" evidence suggests that there exists a form of proof that can provide direct and actual knowledge of the causal relationship between the defendant's tortious conduct and the plaintiff's injury. "Particularistic" evidence, however, is in fact no less probabilistic than is the statistical evidence that courts purport to shun . . . . "Particularistic" evidence offers nothing more than a basis for conclusions about a perceived balance of probabilities.

Rosenberg, *supra,* 97 Harv.L.Rev. at 870 (footnotes omitted). Except where it appears that the absence of anecdotal evidence may be due to spoliation, probabilities based upon quantitative analysis should support a recovery. *See,*

e.g., E.M. Morgan & J.M. Maguire, Cases and Materials on Evidence, 39 (7th ed. 1985).

There would appear to be little harm in retaining the requirement for "particularistic" evidence of causation in sporadic accident cases since such evidence is almost always available in such litigation. In mass exposure cases, however, where the chance that there would be particularistic evidence is in most cases quite small, the consequence of retaining the requirement might be to allow defendants who, it is virtually certain, have injured thousands of people and caused billions of dollars in damages, to escape liability. Because of this fact and the fact that "particularistic evidence . . . is . . . no less probabilistic than . . . statistical evidence," the "weak" version of the preponderance rule appears to be the preferable standard to apply in mass exposure cases – particularly where, as here, all claimants and defendants are joined in one suit.

(a) *Application of the Preponderance Rule to Mass Exposure Cases*

Conventional application of the "weak" version of the preponderance rule would dictate that, if the toxic substance caused the incidence of the injury to rise more than 100% above the "background" level, each plaintiff exposed to the substance could recover if he or she is suffering from that type of injury. If, however, to put it in somewhat graphic, albeit artificial terms, the incidence rose only 100% or less, no plaintiff could recover – i.e., the probability of specific causation would not be more than 50%.

Where a plaintiff's injuries result from a series of unrelated sporadic accidents, this "all-or-nothing" rule is justifiably rationalized on the ground that it is the fairest

and most efficient result. In mass exposure cases, however, this all-or-nothing rule results in either a tortious defendant being relieved of all liability or overcompensation to many plaintiffs and a crushing liability on the defendant. These results are especially troublesome because, unlike the sporadic accident cases, it may be possible to ascertain with a fair degree of assurance that the defendant did cause damage, and, albeit with somewhat less certainty, the total amount of that damage.-

The problem is both illustrated and further compounded by the fact that lack of precision in the data and models used may cause the range of the probabilities estimated by the statistical proof to lie on either or both sides of the 100% line. Because the statistical proof will almost never be as complete or as free from confounding factors as desirable, it may be possible to infer, for example, that the toxic substance caused the incidence to rise over the background level somewhere between 80 and 120%. *See, e.g., Allen v. United States,* 588 F.Supp. 247, 438, 439 n. 197 (D.Utah 1984) (noting significant variation in experts' interpretations of statistical evidence relating to the likelihood that plaintiff's cancer was caused by exposure to radiation). Moreover, issues of credibility and varying inferences drawn by the trier based upon varying assessments of probative force may cause reasonable people to assess these percentages in a range from almost zero to well over 120. *See, e.g.,* E.M. Morgan & J.M. Maguire, Cases and Materials on Evidence, ch. 1 (7th ed. 1983).

Under the traditional application of the preponderance rule, whether individual plaintiffs recover will depend on where the probability percentage line is drawn despite the fact that a reasonable trier would conclude that a large proportion of the plaintiffs were injured by the defendant and a large number were not. Even if the statistical in-

crease attributed to the substance in question is just a few percentage points, if statistical theory supports a finding of correlation there is no reason why the industry as a whole should not pay for the damages it probably caused.

A simple hypothetical will illustrate why too heavy a burden should not be placed on plaintiffs by requiring a high percentage or incidence of a disease to be attributable to a particular product. Let us assume that there are 10 manufacturers and a population of 10 million persons exposed to their product. Assume that among this population 1,000 cancers of a certain type could be expected, but that 1,100 exist, and that this increase is "statistically significant," permitting a reasonable conclusion that 100 cancers are due to the product of the manufacturers. In the absence of other evidence, it might be argued that as to any one of the 1100 there is only a chance of about 9% (100/1100) that the product caused the cancer. Under traditional tort principles no plaintiff could recover.

(b) *Inadequacy of Individualized Solutions*

Any attempt to resolve the problem on a plaintiff-by-plaintiff basis cannot be fully satisfactory. The solution that would most readily suggest itself is a burden shifting approach, analogous to that used in the indeterminate defendant situation already discussed. *Allen v. United States* provides a good example of how burden-shifting would be applied in an indeterminate plaintiff case. A plaintiff must show that the defendant, in that case the United States, negligently put "an identifiable population group" of which he was a member at "increased risk" and that his injury is

> consistent with having been caused by the hazard to which he has been negligently subjected, such consistency having been demonstrated by sub-

> stantial, appropriate, persuasive and connecting factors. . . .

Allen, 588 F.Supp. at 415. At that point, the burden shifts to the defendant which will be held liable unless it can offer "persuasive proof" of noncausation. *Id.*

Generally courts have shifted the burden to the defendant to prove that it was not responsible for plaintiff's injury only in sporadic accident cases where it was certain that one of a very limited number of defendants injured the plaintiff, *see, e.g. Summers v. Tice,* 33 Cal.2d 80, 199 P.2d 1 (1948); *Ybarra v. Spangard* 25 Cal.2d 486, 154 P.2d 687 (1944), or in mass exposure cases where general causation was certain and liability was apportioned in accordance with some market-share theory. *See, e.g., Sindell v. Abbott Laboratories,* 26 Cal.3d 588, 607 P.2d 924, 163 Cal.Rptr. 132, *cert. denied,* 449 U.S. 912, 101 S.Ct. 285, 66 L.Ed.2d 140 (1980); *Copeland v. Celotex Corp.,* 447 So.2d 908 (Fla.App.1984). *But see Abel v. Eli Lilly & Co.,* 418 Mich. 311, 343 N.W.2d 164 (1984) (joint and several liability in DES cases).

Shifting the burden of proof in such cases will, at least theoretically, not result in crushing liability for the defendant either because the litigation only involves a sporadic accident, as in *Summers* and *Ybarra,* or because the defendant will only be held liable for the amount of damage it caused based on market share – although as indicated above, there may be practical problems in defining market share. By contrast, shifting the burden of proof in the indeterminate plaintiff situation could result in liability far out of proportion to damage caused. It is not helpful in most situations to say that the defendant will not be liable for "those harms which [he] can reasonably prove were *not* in fact a consequence of his risk-creating, negligent

conduct," *Allen,* 588 F.Supp. at 415, since, were such individualized proof available, there would have been no need to shift the burden.

(3) Possible Solution in Class Action

Since the problem results from a plaintiff-by-plaintiff method of adjudication, one solution is to try all plaintiffs' claims together in a class action thereby arriving at a single, class-wide determination of the total harm to the community of plaintiffs. Given the necessarily heavy reliance on statistical evidence in mass exposure cases, such a determinaton seems feasible. The defendant would then be liable to each exposed plaintiff for a pro rata share of that plaintiff's injuries.

This approach can be illustrated using the hypothetical given above. Suppose all 1,100 of those who were exposed to the harmful substance and who developed the cancer in the example join in a class action against all 10 manufacturers. Let us say that damages averge $1,000,000 per cancer. A recovery of $100,000,000 (100 x $1,000,00) in favor of the class would be allowed with the percentage of the award to be paid by each manufacturer depending on the toxicity of its product. For example, if a company produced only 20% of the substance in question but, because of the greater toxicity of its product, likely caused 60% of the harm, it would contribute 60% of the total amount. If accurate records are available on the composition of each defendant's product, that analysis should be possible.

Since no plaintiff can show that his or her cancer was caused by any one of the defendants, they should divide the $100,000,000 by 1,100, giving each a recovery of about $90,000. While any plaintiff might feel that his or her recovery denigrated the degree of harm, the alternative of receiving nothing is far worse. The latter is, of course, the

necessary result in any plaintiff's individual suit. Moreover, the deterrent effect of this result on producers would be significant. *See* Delgado, Beyond *Sindell:* Relaxation of Cause-in-Fact Rules for Indeterminate Plaintiffs, 70 Cal.L.Rev. 881, 893 (1982).

If the number of cases were only 1,050, most statisticians would say the difference was not statistically significant and a court using the pro rata approach might find that the defendant is not legally responsible for any of the increased incidence. *But see Allen v. United States,* 588 F.Supp. at 416-17 (noting that although increased incidence might be deemed "insignificant" by a scientist or statistician, it may well be that it "is still far more likely than not" that "the observed increase is related to its hypothetical cause rather than mere chance"). (In the numbers used, the standard deviation could be computed by square root as $1000 = 31.6$. Two standard deviations – a rough test of statistical significance often used in the law – is 63.2; 50 is less than two standard deviations. Yet, assuming the 100 variation of the hypothetical (more than 3 standard deviations), the law should nonetheless attribute to the defendants all 100 additional cancers, not just 100 minus 63 or 37 (the total variation less two standard deviations). As a matter of rough justice, once legal responsibility for the increased incidence is found, it is sounder to attribute all 100 cases to the defendant, even though a substantial number of these cases may be random variations with no reasonable assurance that they are attributable to the defendants' actvities. There is, of course, also the possibility that more than 100 cases were "caused by" defendant's activities since the figure properly attributable to background cancer incidence might have been less than 1000. We are in a different world of proof than that of the archetypical smoking gun. We must make

the best estimates of probability that we can using the help of experts such as statisticians and our own commonsense and experience with the real universe.

Putting a dollar amount on the damages suffered by individual plaintiffs is, from a real-world standpoint, a critical part of the solution. If the judicial and monetary economies of the class action are not to be lost through lengthy and expensive individual trials on damages, some mechanism must be devised to decide damage claims without the need for a full-fledge trial for each plaintiff. As Professor Rosenberg points out, "[p]ossibly the greatest source of litigation expense [in mass exposure tort litigation] is the individual assessment and distribution of damages that must follow trial of common liability questions." Rosenberg, *supra,* 97 Harv.L.Rev. at 916.

How individualized such a mechanism would have to be depends on (1) the size of the individual claim and (2) what the variations between plaintiffs are in the nature of the claims: the smaller the individual claim and the less the variation, the more generalized the process can be. If the claims are for one type of injury, a compensation schedule to calculate average loss could be developed based on sampling techniques. *See* Manual for Complex Litigation § 2.712 at 116-18 (1982). If a number of different injuries are to be compensated, the process could be made somewhat more sophisticated.

Every effort should be made to reduce questions of fact to a bare minimum. A preferred solution is to pay claims on a fixed and somewhat arbitrary schedule using a ministerial agency as is done with the Medicaid and Medicare programs where disbursements are made by insurance agencies acting for the United States.

No matter what system is used the purpose is to hold a defendant liable for no more than the aggregate loss fairly attributable to its tortious conduct. As long as that goal is met a defendant can have no valid objection that its rights have been violated.

The legal arguments in favor of and against certification of plaintiffs as a class in mass tort actions under Rule 23 of the Federal Rules of Civil Procedure and the relevant cases have already been analyzed in this court's decision certifying plaintiffs' class. *In re "Agent Orange" Product Liability Litigation*, 100 F.R.D. 718 (E.D.N.Y.1983), *mandamus denied*, 725 F.2d 858 (2d Cir.), *cert. dnied*, ___ U.S. ___, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). The present discussion assumes that the class is otherwise suitable for certification and will focus on the relevant analogies and precedent and on the practical advantages of a class action in resolving mass exposure cases with indeterminate plaintiffs.

(a) *Analogy and Precedent*

(i) *The Employment Discrimination Cases*

It was noted above that courts have only recently been faced with fact patterns involving mass exposure and indeterminate plainiffs. That is not to say that there is no relevant guidance or precedent. In the employment discrimination area courts have long dealt with cases involving a defendant who through his acts exposed an entire class to harm resulting in an injured class with indeterminate plaintiffs. The solutions developed and the reasoning used by some courts in those cases parallel that outlined above for the mass exposure fact patterns. The defendant employer has acted wrongfully through his discri-

minatory acts. As here, however, it is often impossible to prove whether the plaintiff's condition, in that case the lower salary or lack of promotion or employment, is due to the defendant's wrongful acts or whether it would have occurred even absent the discriminatory acts. For example, if class members outnumber the openings for job promotions it is undeniable that some class members would not have been promoted even if there had been no discrimination. The solution adopted by some courts parallels the pro rata approach suggested above for mass exposure cases: awards are based on the "average" pay and rank of a group of employees, not injured by discrimination, comparable in all other material respects, such as ability and length of employment. *See, e.g. Bowe v. Colgate-Palmolive,* 489 F.2d 896, 902-907 (7th Cir.1973); *Pettway v. American Cast Iron Pipe Co.,* 494 F.2d 211, 260-63 (5th Cir.1974); *United States v. Wood, Wire & Metal Lathers Int. Union, Local Union 46,* 328 F.Supp. 429, 443-45 (S.D.Y.1971); *cf. Eovaldi v. First Nat. Bank of Chicago,* 71 F.R.D. 334, 337 (N.D.Ill.1976), *rev'd on other grounds,* 596 F.2d 188 (7th Cir.1979) (each class member of group of credit card holders injured by the defendant's violation of Truth in Lending Act awarded damages based on presumed damages of average class member although some class members were almost certainly not injured by defendant).

In the employment discrimination cases the impossibility of identifying individual class members is recognized. The courts have noted that although "[t]here is no way of determining which jobs the class members would have . . . obtained if [the] discriminatory [system] . . . had not been in existence [because] [c]lass members outnumber promotion vacancies . . . . [i]t does not follow that back pay claims based on promotions cannot be awarded." *Pettway*

v. American Cast Iron Pipe Co., 494 F.2d 211, 260 (5th Cir.1974). "Doubts about which individuals . . . would have been promoted" call for "a class approach." *Id.* at 261 n. 150.

> [T]he total award for the entire class would be determined. At that point, individual claims would be calculated on *pro rata* shares for those workers of similar ability and seniority claiming the same position, possibly eliminating the necessity of deciding which one of many employees would have obtained the position but for the discrimination.

Id. at 263 n. 154. Here, too, the "total [injury] to the entire class [can] be determined" and, "[a]t that point, individual claims could be calculated on *pro rata* shares for those" exposed plaintiffs "claiming the same" injury, "eliminating the necessity of deciding which one of many" plaintiffs would not have developed the injury "but for" the exposure. *Cf.* P.J. Spiegelman, Court-Ordered Hiring Quotas After *Stotts:* A Narrative on the Role of Feminine and Masculine Voices in the Legal Process, 31ff. (1984).

The *"Agent Orange"* case is especially well-suited to the application of such an approach. Not only are all producers of the allegedly harmful substance before the court, but so is almost every person allegedly injured who could now be before an American court. While, for example, American civilians and Vietnamese residents may have been injured, the statutes of limitations have probably run on their claims.

(ii) *Consumer Class Actions*

There is another area in which courts have dealt with fact patterns involving large numbers of injured plaintiffs where it is possible to determine the damage on a class-

wide basis, but it is not feasible to determine the amount of damage suffered by each class member and to compensate him for that damage. Such situations arise where defendants have sold a product to, or performed a service for, numerous persons, sometimes ranging into the millions, and have illegally overcharged many or all of those persons. While each class member's damages are often quite small, the defendant has reaped a substantial wrongful gain. Because most plaintiffs will not come forward to claim their damages due to the small amounts involved, courts are faced with the choice of either allowing the defendant to keep the wrongful gain or, as a number of courts have done, to distribute the damages to as many members of the class as is practicable. *See,* for example, *Eisen v. Carlisle & Jacquelin,* 52 F.R.D. 253 (S.D.N.Y. 1971), where the defendant brokerage firms were accused of monopolizing odd-lot trading on the New York Stock Exchange and of charging excessively high brokerage commissions. The court in *Eisen* suggested that one possible method of distributing the damages would be to set up "a fund equivalent to the amount of unclaimed damages . . . and [to reduce] the odd-lot differential . . . in an amount determined reasonable by the court until such time as the fund is depleted." *Eisen,* 52 F.R.D. at 265.

This type of solution is sometimes referred to as a "fluid recovery," i.e., one

> which avoids the requirement of individual identification of class members and individual distribution of damages, in favor of a remedy for the next best class, *e.g.*, macro-statistical description of the class harm remedied by future reduction in prices or rates charge by the defendant.

3B J.W. Moore, Moore's Federal Practice ¶23.45[4.-4] (1984).

As in the solution proposed for the indeterminate plaintiff situation, "the damage issue [is tried] only once," with the result that "the amount of damages arrived at is likely to correspond to the total injury inflicted by defendant or the extent of its unjust enrichment." 7A C. Wright & A. Miller, Federal Practice and Procedure § 1784 (1972). Courts must choose between compensating large numbers of demonstrably injured people in an imperfect manner or not compensating them at all.

The fluid recovery theory has received considerable support from courts and commentators. *See, e.g., Eisen v. Carlisle & Jacquelin,* 52 F.R.D. 253 (S.D.N.Y.1971); *Bebchik v. Public Util. Comm'n,* 115 U.S. App. D.C. 216, 318 F.2d 187, 203-04 (D.C.Cir.) (fund established for benefit of transit riders after proof that they were overcharged by defendant), *cert. denied,* 373 U.S. 913, 83 S.Ct. 1304, 10 L.Ed.2d 414 (1963); *Daar v. Yellow Cab Co.,* 67 Cal.2d 695, 433 P.2d 732, 63 Cal.Rptr. 724 (1967) (using fluid recovery to benefit taxicab customers overcharged by defendant); 7A C. Wright & A. Miller, Federal Practice and Procedure § 1784 (1972); Dam, Class Actions: Efficiency, Compensation, Deterrence, and Conflict of Interest, 4 J. Legal Stud. 47 (1975); Comment, Damage Distribution in Class Actions: The Cy Pres Remedy, 39 U.Chi.L.Rev. 448 (1972). Yet the concept has met a good deal of resistance from the appellate courts. *See, e.g., Eisen v. Carlisle & Jacquelin,* 479 F.2d 1005, 1010-12 (2d Cir.1973) (rejecting the district court's use of a "fluid recovery" scheme); *aff'd on other grounds,* 417 U.S. 156, 94 S.Ct. 2140, 40 L.Ed.2d 732 (1974); *In re Hotel Telephone Charges,* 500 F.2d 86 (9th Cir.1974) (rejecting use of "fluid damages"); *see also* Malina, Fluid Class Recovery as a Consumer Remedy in Antitrust Cases, 47 N.Y.U.L.Rev. 477 (1972) (criticizing use of a fluid class recovery). Nevertheless it is regularly used as a settlement mode in consumer class actions. *See,*

e.g., In re Folding Carton Antitrust Litigation, 557 F.Supp. 1091 (N.D.Ill.1983); *West Virginia v. Chas. Pfizer & Co.,* 314 F.Supp. 710 (S.D.N.Y.1970), *aff'd,* 440 F.2d 1079 (2d Cir.), *cert. denied,* 404 U.S. 871, 92 S.Ct. 81, 30 L.Ed.2d 115 (1971).

It should be emphasized that we are not concluding that the analysis and solutions in the employment discrimination and consumer class action cases compel a similar result in the mass exposure cases. There are obviously differences between the fact patterns. It also appears undisputed that no court, except perhaps as part of a settlement, has ever applied the pro rata plan in mass exposure cases. Given the present reluctance of many courts to certify mass tort litigation as class actions, it is likely that courts, at least for a number years, will not be faced with a request to adopt such an approach. *See* the analysis of cases in *In re "Agent Orange" Product Liability Litigation,* 100 F.R.D. 718 (E.D.N.Y.1983), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). The application of such a scheme, although consistent with the accepted goals of tort law, requires a fundamental rethinking of a number of well established legal concepts. Nevertheless, the employment discrimination and consumer class action cases reflect a pragmatic judicial solution to analogous problems, providing a clue to the direction courts may properly take in resolving mass exposure cases.

(b) *Practical Advantages of a Class-wide Solution*

In addition to the strong legal arguments in favor of dealing with the indeterminate plaintiff fact pattern in a class action, there are strong practical considerations as well. The most important of these was already noted in passing – namely, the judicial and economic efficiencies

that result from class-wide treatment. This factor has already been alluded to in the opinion certifying plaintiffs as a class. *See In re "Agent Orange," Product Liability Litigation,* 100 F.R.D. 718 (E.D.N.Y.1983).

Although recent studies suggest that defendants in mass tort cases spend more than plaintiffs do for legal services, *see* J. Kahalik, P. Ebener, W. Felstiner & M. Shanley, *Costs of Asbestos Litigation,* Rand Corp., The Institute for Civil Justice, (July 1983), defendants, often large corporations, are usually better able to bear the cost of litigating individual suits than are plaintiffs' attorneys who are generally financing the litigation out of their own pockets. A class action, by allowing plaintiffs' attorneys to pool their resources and by forcing the defendants to litigate all of the plaintiffs' claims at once, should not only reduce the overall cost of the litigation significantly but should tend to equalize the odds between the two sides. *Cf.* Note, The Inapplicability of Traditional Tort Analysis to Environmental Risks: The Example of Toxic Waste Pollution Victim Compensation, 35 Stan.L.Rev. 575, 586 (1983). A class action would also facilitate settlement by allowing defendants to buy their peace with all of the plaintiffs at once. *See, e.g., "Agent Orange,"* 100 FR.D. at 721. On the negative side, making it easier to sue may increase the possibility of obtaining unjustified settlements by a form of legal coercion.

By litigating the issue of liability only once courts can avoid the danger of inconsistent verdicts that could easily result in those cases where the increased incidence of the disease hovers around 100%. The danger is especially acute given the number of possible confounding factors and the fact that available data and statistical studies are rarely as reliable and complete as they ideally could be. It is,

therefore, altogether possible that different juries would reach differnt conclusions on similar or identical evidence despite the fact that their interpretations of the evidence might not differ appreciably.

The transaction cost of obtaining a remedy are a proper consideration in determining substantive law. If much of a recovery will go to attorneys and experts rather than to those injured, then traditional tort remedies may be so ineffective as to put in doubt their unity in particular types of cases. Punishment of defendants who cause harm and deterrence of future harmful conduct is a by-product of the traditional tort system, but it should not independently furnish the rationale for private civil litigation. Where, therefore, the transaction costs of obtaining a remedy for a class are much less per dollar recovered than they would be in a case-by-case recovery, the class action may, as a matter of policy, be the only reasonable route to recovery. Added to the costs to defendants and plaintiffs must be the cost to the public and the courts in burdening the system with large numbers of private, individual claims. Thus, while the class action is deemed procedural and distinct from substantive considerations for most purposes, it may become, in a case like *"Agent Orange,"* the only practicable way to secure a remedy.

3. Conclusion as to Indeterminate Plaintiffs and Defendants

The vexing problems of toxic torts probably would be best dealt with by legislation. In the absence of legislative and executive action courts must attempt to devise the most effective and equitable means of dealing with them through approaches that are consonant with present law and reasonable predictions about trends in the law. The enterprise and pro rata liability approaches set forth above

are such an attempt. An enterprise liability approach allows plaintiffs to avoid the otherwise legally fatal effect of their inability to identify the manufacturer of the herbicide to which individual plaintiffs were exposed.

There is a strong likelihood that even if some causal link could be established between Agent Orange and the diseases and conditions from which plaintiffs claim they are suffering, it would be impossible in most cases to identify the individual class members who were injured by Agent Orange. Given the desirability of resolving the indeterminate plaintiff problem using a form of proportional liability or some other acceptable method, a dismissal of the class action would be unwarranted. The statistical theory, available data, and public policy are far from settled. Particularly during this period of rapidly changing scientific approaches and increased threats to the environment, we should not unduly restrict development of legal theory and practice — both substantive and procedural — by dismissing a class action such as the one now before us although the hazards of an ultimate dismissal must be considered in assessing the fairness of the settlement. As has previously been suggested, like inhibitions against dismissal of individual actions do not exist.

We now turn to the related substantive-procedural problems of the government contract defense. The issues raised in the discussion of that defense are closely related to the factual issue of the relative knowledge of the parties.

C. Nature of Liability and Relation to Defense of Government Knowledge

Both plaintiffs and defendants made a number of motions concerning the standard of liability and the government contract defense, which, as will be seen, has a very

direct bearing on the standard of liability. Plaintiffs asked the court to modify the government contract defense to reconsider the first two legs of the defense and to apply some form of strict liability. The defendants urged that under section 707 of the Defense Production Act, 50 U.S.C.App. § 2157, they should not be held liable for damages resulting from their compliance with the government's contracts for production of Agent Orange.

For the reasons given below the court concludes that were the case to go to trial the standard to be applied is essentially one of negligence. The government contract defense would be modified to reflect that standard. As with the other legal issues, however, lack of certainty because of scarcity of legal precedent argues in favor of approving the settlement.

1. Introduction

To recover in tort, a plaintiff must show that the defendant owed him a duty and that he was injured when the defendant breached that duty. In product liability cases the duty, broadly speaking, is defined in one of two ways – (1) negligence: a duty to exercise reasonable care in the design, manufacture and marketing (including warnings and instruction to consumers) of a product or (2) strict liability: a duty not to design, manufacture or market a defective product – whether or not the defect resulted from the lack of exercise of due care.

A third category arises when the product was defectively designed by the government and produced by a manufacturer under contract with the government pursuant to that design. This situation gives rise to the government contract defense. *See generally* Note, Liability of a Manufacturer for Products Defectively Designed by the Government, 23

B.C.L.Rev. 1025 (1982); Note, The Government Contract Defense in Strict Liability Suits for Defective Design, 48 U.Chi.L.Rev. 1030 (1981).

As applied in this case, the defense provides that if a manufacturer produced Agent Orange according to government specifications, it is not liable if it can show that the government knew as much about the dangers of the product as the manufacturer knew or should have known. While phrased as a defense, it is conceptually better understood as part of the standard of liability: a manufacturer had a duty to produce the Agent Orange in compliance with the government specifications, and a duty to warn the United States, as the prime purchaser, of all the dangers associated with its or a comanufacturer's Agent Orange about which it knew or should have known. This portion of the opinion will explore the justifications for the various standards of liability and the rationale for applying a modified form of the government contract defense.

2. Defense Production Act

Defendants contend that plaintiffs are barred from asserting any claims against them, regardless of the standard of liability, because they are immunized from suit under section 707 of the Defense Production Act, 50 U.S.C app. § 2157. That section states, in relevant part, that "[n]o person shall be held liable for damages or penalties for any act or failure to act resulting directly or indirectly from compliance with a rule, regulation, or order issued pursuant to this Act." To understand the application of section 707 to the facts of this case some background is in order.

Section 101 of the Defense Production Act, 50 U.S.C. app. § 207(1)(a), authorizes the President, when necessary,

> to require that performance under contracts of orders . . . which he deems necesary or appropriate to promote the national defense shall take priority over performance under any other contract or order, and, for the purpose of assuring such priority, to require acceptance and performance of such contracts or orders in preference to other contracts or orders. . . .

Section 101 has been implemented through regulations issued by the Business and Defense Services Administration of the Department of Commerce. *See* 32A C.F.R. § 10 (1967). These regulations are now contained in 15 C.F.R. pt. 350 (1984). The regulations create a system for contracts deemed vital to the national Defense. Contracts are "rated" and contractors receiving a "rated" contract are required to accept and perform that contract "regardless of existing contracts and orders." DPS Reg. 1, *id.* at § 17.

As the *quid pro quo* for performances of the contracts, defense contractors are protected form "liab[ility] for damages or penalties for any act or failure to act resulting directly or indirectly from compliance with . . . this Act." 50 U.S.C. app. § 2157. Plaintiffs and defendants agree that all of the contracts between the defendants and the United States for production of Agent Orange were "rated" contracts and thus performance of those contracts is protected by section 707. They disagree, however, as to the scope of that protection. Defendants interpreted literally to bar all suits, in both contract and tort, resulting from performance of the contract. Plaintiffs contend that historical context makes it clear that section 707 bars only suits by third parties, whose contracts with and shipments from the contractor were adversely affected by the "ratings" given the defense contract. Alternatively they argue that for section 707 to apply, there must be a causal relationship between the "rating" (not merely the perfor-

mance of the contract) and the injury. While the prime example of such a causal relationship would be the contract case of the third party whose source of product was cut off because the government took the supply, it is possible to hypothesize tort cases where a causal connection could be found, e.g., where the "rating" formed the contractor to begin production before it was fully ready to or at a quicker pace than it would have done otherwise, resulting in injury to an employee. Under either interpretation, section 707 would not bar the Agent Orange claims.

It is indisputable that the statutory ancestors of section 707 only immunized contractors from liability for breach of contract damages; the law was explicit on that point. "No person . . . shall be held liable for damages or penalties *for any default under any contract or order* which shall result directly or indirectly from his compliance with . . . this section." Act of May 31, 1941, ch. 157, 55 Stat. 236 (emphasis added). The defendants argue that the deletion of the reference to "contract" in section 707 and a number of references in the statutory history about the time the statute was reenacted as the Defense Production Act of 1950 indicate a desire by Congress not to limit the immunity to contractual breaches. For example, they point to language in the Senate committee report that accompanied a minor clarifying amendment made in 1952:

> The first sentence of section 707 of the act contains the so-called exculpatory clause, which protects a person from liability, *under contract or otherwise*, as the result of compliance with the act or regulations issued under the act. This provision was included to encourage and assist people to comply with the act, even though it was recognized that common-law doctrines, such as

> frustration and impossibility of performance and the like, would cover many of the same cases.

S.Rep. No. 1599, 82d Cong., 2d Sess., *reprinted in* 1952 U.S.Code Cong. & Ad. News 1798, 1818 (emphasis added).

The deletion of the reference to contract and the inclusion of this language in the legislative history are inconclusive at best and, in light of other factors, irrelevant. The last sentence in the quoted section of the Senate report is certainly consistent with the interpretation that no change was intended in the scope of section 707.

The only two reported cases we have been able to find applying section 707 involve breach of contract claims and thus shed no light on the question. *See Eastern Air Lines, Inc. v. McDonnell Douglas Corp.*, 532 F.2d 957 (5th Cir. 1976); *United States ex rel. Caldwell Foundry & Machine Co. v. Texas Construction Co.*, 224 F.2d 289 (5th Cir.), *cert. denied*, 350 U.S. 895, 76 S.Ct. 154, 100 L.Ed. 787 (1955).

Several factors militate against giving section 707 full literal effect. The first is that section 707 was enacted as the *quid pro quo* to section 101, the section authorizing the President to compel acceptance and give high priority to defense contracts. Logically, then, the protection afforded by section 707 should correspond to the risk imposed, viz., the possible need for the contractor to break its contracts with third parties or the increased risk to employees or users posed by speeded-up production. Except in rare instances there is no logical connection between the compulsion of section 101 and the risk of injuries to those using or exposed to the contractor's product; the risk is something that all government contractors have in common and is already taken into account in the government contract defense.

Second, it is unlikely that Congress would work such a major change in tort law without being explicit about it. This point is emphasized by the fact that when, in analogous areas, Congress did deal with the question of tort liability it was quite explicit about it. A good example is contained in the enactment of the First War Power Act which, among other things, permitted the president in time of national emergency to make indemnity payments to defense contractors under certain contracts. Act of August 28, 1958, Pub.L. No. 85-804, 72 Stat. 972. The Congressional report indicated that the reason for such power is that "production contracts may involve items, the production of which may include a substantial element of risk, giving rise to the possibility of an enormous amount of claims . . . [T]o the extent that commercial insurance is unavailable, the risk of loss in such a case should be borne by the United States" through indemnification. S.Rep. No. 2281, 85th Cong., 2d Sess., *reprinted in* 1958 U.S. Code Cong. & Ad. News 4043, 4045. The report noted that "[t]he Atomic Energy Commission now possesses similar indemnification authority by virtue of the enactment of the Price-Anderson Act." *Id.* It is telling that neither the Defense Production Act itself nor the legislative history made any reference to tort claims despite the fact that, as evidenced by this suit, the contracts "rated" under the Act "involve items, the production of which may . . . giv[e] rise to the possibility of an enormous amount of claims.

If section 707 is to be applied to tort claims at all, it should only be read to bar claims for strict liability, not to negligence. The former involve holding a defendant liable despite the fact that it may not have been at fault and the liability thus truly "result[s] . . . from compliance with . . . this Act." Whether this last interpretation or one not applying section 707 to tort suits altogether is adopted, the Defense Production Act would not bar plaintiffs' claims.

3. Law to be Applied to Contract Defense

Before discussing possible modification of the government contract defense, it is necessary to decide which law applies to that defense. Since jurisdiction in this case is based on diversity, *In re "Agent Orange" Product Liability Litigation,* 635 F.2d 987 (2d Cir. 1980), *cert. denied,* 454 U.S. 1128, 102 S.Ct. 980, 71 L.Ed.2d 116 (1981), this court under the rule of *Klaxon Co. v. Stentor Electric Manufacturing Co.,*313 U.S. 487, 61 S.Ct. 1020, 85 L.Ed. 1477 (1941), has looked to the courts of the relevant states to determine what law applies and has concluded that a national consensus or federal common law would govern. *In re "Agent Orange" Product Liability Litigation*, 580 F.Supp. 690 (E.D.N.Y. 1984).

That diversity is the basis of jurisdiction does not control the law applicable to any defenses that may be raised. *Franchise Tax Bd. v. Construction Laborers Vacation Trust,* 463 U.S. 1, 103 S.Ct. 2841, 2846-47, 77 L.Ed.2d 420 (1983); *Tennessee v. Union & Planters' Bank,* 152 U.S. 454, 14 S.Ct. 654, 38 L.Ed. 511 (1984). Regardless of the law applied to other substantive issues, it may be necessary under the Supremacy Clause to apply federal law to defenses such as the government contract defense. As the Court of Appeals recognized, its holding that federal common law does not provide a basis for jurisdiction in this case "'did not decide whether potential defenses implicating federal interests such as the government contract defense would be governed by federal or state law." *In re Diamond Shamrock Chemicals Co.,* 725 F.2d 858, 861, n. 2 (2d Cir. 1984), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984).

In determining whether federal law applies to a claim or defense, a court must look to (1) whether there "exist[s]. . . a substantial federal interest in the outcome of [the issue],

(2) [what] the effect on this federal interest [would be] should state law be applied; and (3) [what] the effect on state interests [would be] should state law be displaced by federal common law." *In re "Agent Orange" Product Liability Litigation,* 506 F.Supp. 737, 746 (E.D.N.Y. 1979) *rev'd on other grounds but quoted with approval in* 635 F.2d 987, 990 (2d Cir. 1980), *cert. denied,* 454 U.S. 1128, 102 S.Ct. 980, 71 L.Ed.2d 116 (1981).

This court has already discussed the extensive federal interest in the government contract defense. *"Agent Orange"*, 580 F.Supp. at 701-05. It pointed out that the Supreme Court has recognized the "distinctively federal" nature of the "relationship between the Government and its suppliers of ordnance." *Stencel Aero Engineering Corp. v. United States,* 431 U.S. 666, 672, 97 S.Ct. 2054, 2058, 52 L.Ed.2d 665 (1977). The court also noted that "the existence and scope of a contractor's liability, if any, will undoubtedly affect future dealings between the contractor and the government." *"Agent Orange,"* 580 F.Supp. at 705.

Of particular significance in this case is the rule that "ordinarily federal law controls the construction and applicability of government contracts." *Id.* (citing *Preibe & Sons, Inc. v. United States,* 332 U.S. 407, 68 S.Ct. 123, 92 L.Ed. 32 (1947)). While the rule is arguably not directly applicable (*but see supra* for agrument that Defense Production Act, under which the Agent Orange contracts were performed, dictates standard of liability), it is certainly suggestive. Not only was Agent Orange produced pursuant to contracts with the United States, but those contracts were performed under the threat of compulsion by federal law. As will be noted *infra,* that compulsion is one of the important factors in the formulation of the government contract defense.

What was just said is also relevant in applying the second consideration, "the effect on this federal interest should state law be applied." It might be grossly unfair to subject a defense contractor who produced war materiel for the national government under the compulsion of federal law to the laws of dozens of different states in determining what standard governs its liability for damages resulting from the production. There is, therefore, a substantial federal interest in uniformity for its own sake.

As to the third consideration, there will be virtually no negative "effect on state interests should state law be displaced by federal common law." There is, of course, a well developed body of state law dealing with negligence and strict product liability. Nevertheless, "[s]tate tort law has not yet evolved rules to govern the duties of federal war contractors to federal soldiers." *"Agent Orange,"* 506 F.Supp. at 749. Although there have been a number of cases applying state law to the government contract defense, *see, e.g., Brown v. Caterpillar Tractor Co.*, 696 F.2d 246 (3d Cir. 1982); *Whitaker v. Harvell-Kilgore Corp.*, 418 F.2d 1010 (5th Cir. 1969); *Casabianca v. Casabianca*, 104 Misc. 2d 348, 428 N.Y.S.2d 400 (Sup.Ct. 1980), all of them were suits by individual soldiers or civilians injured either by nonmilitary products, such as bulldozers (*Brown*) and dough mixers (*Casabianca*) or by defects in airplanes and explosives, objects whose misuse is frequently regulated by state tort law. None of them implicated to the same extent any of the federal interests detailed above relating to Agent Orange.

4. Modification of the Government Contract Defense

The rationale for the government contract defense and its formulation and application to this case have been discussed extensively in previous decisions. *See In re "Agent Orange"*

Product Liability Litigation, 506 F.Supp. 762, 792-96 (E.D.N.Y. 1980); *id.*, 534 F.Supp. 1046, 1053-58 (E.D.N.Y. 1982); 565 F.Supp. 1263 (E.D.N.Y. 1983); *id.*, 580 F.Supp. 690, 701-05 (E.D.N.Y. 1984).

In 1982, this court concluded that

> a defendant will be entitled to judgment dismissing all claims against it . . . if the defendant proves
>
> > 1. That the government established the specifications for "Agent Orange";
> >
> > 2. That the "Agent Orange" manufactured by the defendant met the government specifications in all material respects; and
> >
> > 3. That the government knew as much or more than the defendant about the hazards to people that accompanied use of "Agent Orange."

Id., 534 F.Supp. at 1055. The opinion made it clear that to show that the government "set" the specifications and that it met those specifications, "all that is necessary . . . for [a] defendant to prove [is] that the product it supplied was a particular product specified by the government." *Id.*,at 1056. The fact that a defendant may have played a "role . . . in preparation of the specifications, whether it be advice to the government about the product design, or even touting of the product to the government," was not relevant for the first two elements of the defense, although it "may be relevant in establishing the relative degrees of knowledge as between the government and the defendants." *Id.*

Subsequently the court concluded that "[e]ach defendant has established the first two elements of the defense — that

the government established the specifications for Agent Orange and that the Agent Orange manufactured by the defendant met those specifications in all material respects," *In re "Agent Orange" Product Liability Litigation,* 565 F.Supp. 1263, 1274 (E.D.N.Y. 1983) — and therefore granted summary judgment in defendants' favor on those two material propositions. *See id.*

Plaintiffs contend that, for several reasons, the government contract defense cannot be used to bar their claims. They argue, first, that the defendants' role in formulating Agent Orange and their long time civilian experience with its components made it defendants' own product and make the government contract defense inapplicable. Specifically, they contend that Agent Orange is merely a combination of two herbicides, 2,4-D and 2,4,5-T, that had long been produced by the defendants for the civilian market for use by farmers and homeowners. As a result, they conclude, the rationale of the government contract defense, that "[c]ourts should not require suppliers of ordnance to question the military's needs or specification for weapons during wartime," *"Agent Orange,"* 534 F.Supp. at 1054, does not apply; the specifications were already drawn up and used by the defendants for many years. As a variation on this point they urge that the court reconsider the first two legs of the government contract defense and redefine the first leg to include a requirement that a defendant not have had any input into the setting of the specifications. They also urge that the court hold that the second leg of the defense is not met if a defendant's Agent Orange contained dioxin; defendants do not seriously contest that almost all their Agent Orange did contain dioxin, although they claim not in amounts large enough to be harmful. Plaintiffs note that dioxin was not part of the specifications and, therefore, they conclude, the defendants supplied a product that did not conform to the specifications.

Plaintiffs' arguments have some force, especially when examined in light of the policies that underlie the government contract defense. One of the purposes of imposing tort liability is the "strong incentive" that the imposition provides "to prevent the occurrence of future harm." *"Agent Orange,"* 506 F.Supp. at 793 (citing W. Prosser, Handbook of the Law of Torts, 23 (1971)). If the defense contractor's "only role in causing the injury was the proper performance of a plan supplied by the government," then there can be no deterrent effect since the contractor is not "in a position to correct the tortious act or omission." *Id.* at 793-94. The situation is different where a contractor does play a "role in causing the injury" by manufacturing and marketing the product for civilian use and the product was not wholly a military creation.

As an outgrowth of the manufacture and production, many of the defendants had considerable experience with the hazards of trace amounts of dioxin in 2,4,5-T and a number of the defendants had done extensive research, about which all of the defendants were aware, into the hazards of dioxin. Thus, although the defendants are correct in their assertion that the government "invented" Agent Orange in the sense that 2,4-D and 2,4,5-T (the components of Agent Orange) had never been previously combined in that form and manner, Agent Orange was very closely related to "shelf products" with which the chemical companies had a good deal of familiarity from the civilian market.

A second reason given for the government contract defense is that without it

> a manufacturer capable of producing military goods for government use would face the untenable position of choosing between severe penalties for failing to supply products necessary to conduct a war,

> and producing what the government requires but at a contract price that makes no provision for the need to insure against potential liability for design flaws in the government's plans.

"Agent Orange," 506 F.Supp. at 794. What was said in discussing the applicability of the deterrence rationale applies here with equal force. It is true that the defendants' contracts "Ma[d]e no provision for the need to insure against potential liability for design flaws in the government's plans." Because of their long experience with components of Agent Orange, however, defendants were in a position to "insure" against liability for government design flaws by learning from their civilian experience of the dangers of 2,4-D, 2,4,5-T and dioxin. The situation here is thus distinguishable from almost all other recent cases applying a government contract defense in that the product was neither one with a primarily military application, *see, e.g., McKay v. Rockwell International Corp.*, 704 F.2d 444 (9th Cir.), *cert. denied*, U.S. , 104 S.Ct. 711, 79 L.Ed.2d 175 (1983) (ejection system for military aircraft); *Whitaker v. Harvell-Kilgore Corp.*, 418 F.2d 1010 (5th Cir. 1969) (hand grenade), nor a civilian product specifically modified for use by the military with the injury resulting from the modification. *See e.g., Brown v. Caterpillar Tractor Co.*,696 F.2d 246 (3d Cir.1982) (defendant alleged that government specifications called for bulldozer with no protective structure around the passenger seat); *Sanner v. Ford Motor Co.*, 144 N.J.Super. 1, 364 A.2d 43 (1976), *aff'd*, 154 N.J.Super. 407, 381 A.2d 805 (1977), *cert. denied*, 75 N.J. 616, 384 A.2d 846 (1978) (jeep manufactured to military specifications without seat belts or roll bar).

If plaintiffs' allegations are correct, the dangers that accompanied the spraying of Agent Orange were far greater than those posed by the products in the "ordinary" product liability cases in which the government contract defense has been in-

voked, and unprecedented in tort law in their magnitude. While defendants had no control over how Agent Orange was used by the military, they were undoubtedly aware of the scope of the spraying program and the concentrations in which Agent Orange was being sprayed.

The defendants respond by pointing out that although the components may not have been unique to Agent Orange, it was sprayed in concentrations much greater than that recommended for civilian use and without the precautions recommended for civilian use. This they claim, made the risks far greater and wholly different from those posed by civilian use and made Agent Orange a military product for purposes of the government contract defense.

While this last fact of concentrated use does call for the application of some form of government contract defense, it does not justify the application of the government contract defense in its present form. It is not disputed that the defendants had years of experience with the herbicide's components. If the government's methods of spraying increased the risk beyond that experienced in civilian use, that factor is relevant in determining what a defendant knew or should have known about the dangers of Agent Orange, but it does not make a defendant's experience irrelevant.

What is needed, then, is a standard of liability crafted for the particular needs of this case that takes into account both the fact that defendants were compelled to produce Agent Orange for the military in time of war and had no control over its use by the military and the fact that the defendants had years of experience with the components of Agent Orange.

The plaintiffs' suggested modifications do not meet the first part of that need. Stripping a defendant of the protection of

the government contract defense entirely, which is the practical effect of their proposed changes, (1) would result in a defendant's being liable without regard to how much the government knew about the dangers of Agent Orange when it compelled the defendant to produce the herbicide and (2) depending on the form of strict liability used, could result in a defendant's being liable even if it had no reason to know of the dangers of Agent Orange.

It is possible, however, to properly balance the relevant considerations by keeping the first two legs of the government contract defense intact while modifying the standard of liability as follows: A plaintiff would be required to prove, along with the other elements of his cause of action, that the hazards to him that accompanied use of Agent Orange were, or reasonably should have been known, to the defendant. The burden would then shift to each individual defendant to prove (1) that the government knew as much as or more than that defendant knew or reasonably should have known about the dangers of Agent Orange or (2), even if the government had had as much knowledge as that defendant should have had, it would have ordered production of Agent Orange in any event and would not have taken steps to reduce or eliminate the hazard.

The "knew or reasonably should have known" standard is meant to ensure that, at least in the case of a highly technical product with which a manufacturer has had years of experience and which allegedly caused damage unprecedented in its magnitude, a defendant is not "encourag[ed] to know as little as possible about the dangers of [its] product [ ]." Note, Liability of a Manufacturer for Products Defectively Designed by the Government, 23 B.C.L.Rev. 1025, 1078-79 (1982).

Allowing a defendant to exculpate itself by proving government knowledge serves several purposes. First, a manufacturer is entitled, at least in cases where it was compelled to produce under threat of fine or imprisonment, to expect that if the government is aware of a hazard, it has either taken steps to reduce or eliminate the hazard or has made a conscious decision to use the product despite the dangers. Second, if the government was aware of the hazard, no harm results from the lack of warning and the element of proximate cause is, therefore, missing. W. Prosser, Handbook of the Law of Torts, 682 (1971). These two reasons also explain why a "should have known" standard is not appropriate for the government's knowledge; if the government is not aware of the dangers, a defendant obviously can not rely on its making a conscious decision on how to deal with that hazard and the lack of warning would, very likely, cause harm. There are several other reasons as well: the fact that the government may have been derelect in its duty should not relieve a defendant from the consequences of its negligence. Furthermore, an inquiry into what the military should have known or done could come perilously close to the second-guessing of military decisions prohibited by *Feres v. United States,* 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950) and *Stencel Aero Engineering Corp. v. United States,* 431 U.S. 666, 97 S.Ct. 2054, 52 L.Ed.2d 665 (1977).

In practical terms, then, it appears reasonable to modify the law applicable to the case at hand so that a defendant would not be liable despite the fact that it negligently produced a defective product if it could show either that the government knew of the defect or that it would not have acted any differently even if it had known. The fact that there has never been an appellate ruling approving this ap-

proach creates uncertainty in the outcome, making settlement more desirable.

D. Punitive Damages

Together with a Rule 23(b)(3) class for compensatory damages, the court certified a mandatory class under Rule 23(b)(1)(B) for punitive damages. *In re "Agent Orange" Product Liability Litigation,* 100 F.R.D. 718, 729 (E.D.N.Y. 1983), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____U.S.____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). The former permits a member to opt out of the class and sue individually while the latter does not. On the basis of information now available, for reasons given below, the court finds that punitive damages are not warranted. This is an important consideration in deciding the reasonableness of the settlement.

Those who have not opted out are bound by the settlement which does not provide for punitive damages. Those who have opted out of the 23(b)(3) class, though they do not share in the settlement, may have an independent, continuing interest in punitive damages. In effect, it could be argued, plaintiffs who have not opted out agreed to forego punitive damages to enhance the amount they received in compensatory damages. This would, arguably, support a contention that lawyers for the (23(b)(3) class had a conflict of interest.

To avoid any claim of conflict in the future, any party who opted out is free to raise this conflict issue by motion within thirty days of issuance of the opinion. It should be noted that those who opted out and their attorneys were free to raise the issue at the Fairness Hearings and they did not do so. Thus, as matters now stand, no person, including those who have opted out of the 23(b)(3) compensatory damage opt-out class, may receive punitive damages.

It has already been held that a national consensus law would apply to all substantive issues, including punitive damages. *In re "Agent Orange" Product Liability Litigation,* 580 F.Supp. 690 (E.D.N.Y. 1984). Although there are semantic differences from state to state in what plaintiff must show to be entitled to punitive damages, the common denominator of all those standards is well expressed by the Restatement (Second) of Torts;

> Punitive damages may be awarded for conduct that is outrageous, because of the defendant's evil motive or his reckless indifference to the rights of others.

Id., §908(2) (1977). *See also, e.g.,* Forde, Punitive Damages in Mass Tort Cases: Recovery on Behalf of a Class, 15 Loy.U.Chi. L.J. 397, 402-403 (1984); *Roginsky v. Richardson-Merrell, Inc.,* 378 F.2d 832, 838-43, 851-52 (2d Cir. 1967). The "outrageousness" standard can be met if the defendant was negligent but only upon a showing of "negligence . . . so gross as to evince an entire want of care and . . . something of a criminal character. Many cases take the view that there must be a conscious failure to use due care." Stein, Damages and Recovery § 187 (1972).

It should be clear from section III, *supra,* dealing with the factual problems with plaintiffs' case, that it would be virtually impossible for an individual plaintiff to show that there were any dangers to him or her from Agent Orange given the current lack of any significant evidence showing a causal connection between exposure to Agent Orange and the diseases and conditions from which plaintiffs say they are suffering. Given evidence of the high level of government knowledge already discussed, there is a substantial possibility that a defendant would be able to establish the government contract defense. Either of these favorable developments from the defendants' point of view would constitute a failure

to establish one of the "facts . . . [necessary] to maintain a cause of action" and the plaintiff would therefore not be entitled to compensatory damages, let alone punitive damages. Restatement (Second) of Torts § 908, comment c (1977).

More important for present purposes, however, is the lack of any evidence that would tend to establish that the defendants acted with the "evil motive or reckless indifference to the rights of others" which would justify the imposition of punitive damages. Construing the evidence in the light most favorable to the plaintiffs, it at best shows that the defendants should have been aware of the dangers to servicepersons posed by the spraying of Agent Orange in heavy concentrations and that they did not pass onto the government information they did have. Such a failure, under the circumstances of this case, will not support a recovery of punitive damages.

Based on the record now before the court and subject to any Motion by a class member who opted out, it appears that no plaintiff, regardless of the standard used, will be able to establish facts sufficient to make out a punitive damages claim. Accordingly, the settlement is reasonable in foregoing punitive damages on behalf of both classes of plaintiffs.

V. GOVERNMENT ACTION TO PROTECT CLASS

An important factor in determining reasonableness is the possibility that members of the class can look to sources other than the manufacturers of Agent Orange for assistance. It is quite clear that the United States government has promised to afford help to servicepersons once causation is shown. This fact militates strongly in favor of finding the settlement fair.

The government of the United States has, at least in theory,

taken extensive steps to diagnose and treat veterans who may have been exposed to Agent Orange. It appears from testimony at the Fairness Hearing that the Australian government is taking a position almost identical with that of the United States government. (Hearings before a Royal Commission reportedly reflect many of the same kinds of complaints about poor medical services afforded veterans as were made by American veterans.) New Zealanders have the protection of a form of socialized medicine that assures medical services to all veterans and their children.

The information that follows is based partly on a letter dated June 19, 1984 from the government to one of the Special Settlement Masters, conferences with the Special Masters and officials of the Veterans Administration, the legislation adopted by Congress and the proposed Veterans' Dioxin and Radiation Exposure Compensation Standards Act. *See, e.g.,* 38 U.S.C. § 354; 130 Cong.Rec. S6144-83 (daily ed. May 22, 1984); H.R.Rep. No. 592, 98th Cong., 2d Sess. (1984) (to accompany H.R.1961, Agent Orange and Atomic Veterans Relief Act); Hearings before the Senate Committee on Veterans' Affairs, 98th Cong., 1st Sess. (June 15 and 22, 1983) ("Veterans' Exposure to Agent Orange").

In the executive branch there is an "Agent Orange Working Group" reporting directly to the White House Cabinet Council on Human Resources. The Group's present chairman is the Chief Medical Officer of the United States.

In evaluating government claims about what it is doing for Vietnam veterans it should be borne in mind that at the Fairness Hearings, *see* II, B, *supra,* veterans repeatedly expressed complaints about VA medical services and testing."

A. Agent Orange Registry

The Agent Orange Registry was established by the Veterans Administration in 1978 to accomplish four objectives: (1) to identify all Vietnam veterans expressing a concern about the possible adverse health effects of their exposure to Agent Orange; (2) to provide a mechanism for Vietnam veterans to voice their concerns to a physician, and to receive a physical examination: (3) to serve as a mechanism for follow-up of these veterans if, at a later date, new information develops as a result of the various research efforts underway or being planned; and (4) to obtain some preliminary information on the current health status of the veterans who have participated in the Registry program. The Registry was designed to, and does, provide some information on the health status questions. It is not, however, by itself a scientifically valid study from which reliable medical conclusions may be drawn. The Registry cannot be considered a reliable or acceptable basis for deriving medical conclusions because of the self-selection of the sample, a lack of precision in the reporting of the exposure history, possibly inadequate examinations in some cases (as reported by a large number of veterans at the Fairness Hearings) and the possibility of selective recall of symptoms and exposure.

Many of those who spoke at the Fairness Hearings testified that they were discouraged by Veterans Administration personnel from claiming Agent Orange effects. Those who persisted were given, they testified, superficial examinations. A number referred to lost and inaccurate records. It was also said that persons who were still in the armed forces were afraid to claim Agent Orange effects because they feared discharge from the service.

Subject to these limitations, the following information is available. As of April 30, 1984, 130,891 veterans had receiv-

ed an initial examination (i.e., a general phyhsical examination with appropriate laboratory studies) and had their cases entered into the Registry. The Registry is an essentially computerized index of the medical records of the examined veterans. Prior to 1983 the index was based on the body system for which health effects were claimed, but it is now predicated on the medical condition diagnosed.

Prior to May 1983, 33,408 of the 85,903 veterans examined, or 39%, complained of skin diseases, ranging from severe psoriasis to athlete's foot. The Veterans Administration contends that this percentage is consistent with general medical experience. "Nervousness" accounted for 15,409 or 17.5 percent of the other complaints.

Since May, 1983 more than 130 different diagnostic groups have been confirmed among the 16,729 veterans examined. 5,403 of 16,729, or 32% of the veterans examined, either did not claim the existence of a disease or no diagnosis of a disease could be confirmed. The most common diagnostic category is again skin disease, totalling 3,726. The next most common diagnostic group is that of cardiovascular disease with 2,250 cases. This category includes varicose veins as well as serious heart diseases.

Copies of the medical examination reports have been provided to the parties, but the reports and the Registry remain of doubtful utility. *See* Comptroller General, Report to the Congress, VA's Agent Orange Examinations Program: Actions Needed to More Effectively Address Veterans' Health Concerns (Oct. 25, 1982).

B. Medical Care to Veterans Claiming Exposure to Agent Orange

Public Law No. 97-72 (codified in pertinent part at 38 U.S.C. § 610) authorized the VA to provide hopsital or nursing home care together with outpatient care designed to prepare a veteran for hospitalization, to provide post-hospitalization follow up or to obviate the need for hospitalization to veterans who may have been exposed during service in Vietnam to a toxic substance found in a herbicide or defoliant. This care is authorized "notwithstanding that there is insufficient medical evidence that [the veteran's] disability may be associated with such exposure." 38 U.S.C. § 610(e)(1)(A).

Veterans Administration help may not be provided under this authority for a disability that is found to have resulted from a cause other than exposure to a herbicide or defoliant used in Vietnam. 38 U.S.C. § 610(e)(2).Although Public Law 97-72 conferred eligibility for VA medical assistance on a specific class of veterans, many members of that class were already eligible for such Veterans Administration care under such provisions of the law. *See* 38 U.S.C. § 610.

The Veterans Administration has published guidelines on availability of Agent Orange related treatment. 46 Fed.Reg. 58,636 (1981); Department of Medicine and Surgery Circular 10-82-185. They permit care for any condition that is not clearly and unmistakably associated with another cause (e.g., conditions resulting from trauma.)

The statistical information that is available discloses that there were 10,900 inpatient admissitons and 434,000 outpatient visits classified as having been provided under Public Law 97-72 during fiscal year 1983. Based upon average utilization rates it is estimated that 6,900 veterans were hospitaliz-

ed and 72,580 were seen as outpatients under the authority of that law. The total cost of hospitalization during fiscal 1983 was estimated at $34,000,000 and the cost of outpatient services at $35,000,000. At the Fairness Hearings witnesses suggested that these figures do not reflect the value of medical services because of inefficiences in the VA facilities.

Many of those who testified at the Fairness Hearings said they could not get useful treatment from the VA under Public Law No. 97-72. They went to their own doctors when they needed help and could afford it. Allegedly there is a wide variation in the quality of care provided in the various VA hospitals; particularly for those living away from large cities, the VA hospitals do not afford reasonable access.

Vietnam veterans are also eligible to receive counseling and related mental health services required because of readjustment difficulties. Family members may also receive counseling to assist in the veteran's treatment and readjustment whether or not the difficulties are related to possible exposure to Agent Orange. Witnesses at the Fairness Hearings indicated that these services were inadequate or below acceptable standards.

C. Aid to Spouses and Children of Veterans

Most veterans' spouses and children with birth defects can obtain no help from government veterans' programs. Protection is much narrower than that given to the veterans themselves. Section 613 of title 38 of the United States Code authorizes the VA to furnish medical care to the spouse or child of a veteran who has a permanent and total service-connected disability and to the surviving spouse or child of a veteran who died as a result of a service-connected disability or who at the time of death had a total disability. 38 U.S.C.

§ 613(a)(1), (2). Medical care may also be provided to the surviving spouse or child of a person who died while in active service if the death was not due to the person's own conduct. *Id.* §613(a)(3). Under section 613 care under the CHAMP-VA program (Civilian Health and Medical Program of the VA may be furnished to these eligible dependents provide they are not eligible for CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) or Medicare benefits.

Dependent children of service personnel killed in action are entitled to CHAMPUS benefits. *See* 10 U.S.C. § 1071, *et seq.* Surviving spouses are also entitled to CHAMPUS benefits except during a remarriage. With limited exceptions the provision of care under the CHAMPVA program is administered by the Department of Defense.

Testimony at the Fairness Hearings indicated that many of those eligible for this personal family help could not receive it. A New York resident, for example, said that he and his family could not afford to go to Washington, D.C., site of the nearest available facility for treatment. A Wyoming resident said he would have to travel 150 miles for this help from the nearest treatment facility. They wanted local private contract medical help paid for by the VA.

D. Exposure Data

The best indication of areas sprayed from the air is based upon a series of computer tapes.These "Service HERBS" tapes were prepared by the United States Army and Joint Services Environmental Support Group (ESG), formerly the Agent Orange Task Force. This material has been provided to the parties. In addition the United States has arranged for testimony concerning the methods used in preparing the tape and other data such as troop locations. Based on testimony

at the Fairness Hearings it seems doubtful that United States records can be relied upon to fix exposure with precision.

There is apparently no complete list of veterans who served in Vietnam and estimates of the number involved vary depending upon the definition of "Vietnam service." The most comprehensive estimate includes persons who flew over the country but never landed there and individuals who spent only a few days in Saigon or who were aboard ships offshore. The more restrictive estimates range from 2.4 to 2.9 million American service personnel during the period when Agent Orange was used. It is impossible, according to the government, to determine how many Americans were exposed, even briefly, to biologically significant amounts of phenoxy herbicides and dioxin (2,3,7,8-TCDD) contained in Agent Orange. In view of this lack of reliable information the VA "will accept in the absence of positive evidence to the contrary a Vietnam veteran's contention of exposure." DVB Cir. 21-80-1, April 3, 1980. It "is the policy of the VA to concede exposure." Circular May 11, 1980.

E. Veterans' Dioxin and Radiation Exposure Compensation Standards Act

Congressional findings with respect to the proposed Veterans' Dioxin and Radiation Exposure Compensation Standards Act state the facts as to the government's action and intentions. The Senate has passed the version described below and its bill was sent to a Conference Committee together with the House version. The findings in the Senate version read, insofar as pertinent, as follows:

> The Congress makes the following findings:
>
> (1) Veterans who served in Southeast Asia during the Vietnam conflict . . . are deeply concerned

about possible long-term health effects of exposure to herbicides containing dioxin . . . .

(2) There is scientific and medical uncertainty regarding such long-term adverse health effects.

(3) In section 102 of Public Law 97-22, the Congress responded to such uncertainty by authorizing priority medical care at Veterans' Administration facilities for any disability of a veteran who may have been so exposed (even though there is insufficient medical evidence linking such disability with such exposure) unless the disability is found to have resulted from a cause other than the exposure.

(4) The Congress has further responded to such medical and scientific uncertainty by mandating, in section 307 of Public Law 96-151 and section 601 of Public Law 98-160, the conduct of thorough epidemiological studies of the health effects experienced by veterans in connection with exposure . . . to herbicides containing dioxin . . .

(5) There is a total of sixty-six federally sponsored research projects currently being conducted relating to herbicides containing dioxin, at a cost to the Federal Government in excess of $130,000,000 . . ..

(6) The initial results of one project — an epidemiological study, conducted by the United States Air Force School of Aerospace Medicine of the health status of the "Ranch Hand" veterans who carried out the loading and aerial spraying of herbicides containing dioxin in Vietnam and in the process came into direct skin contact with such herbicides in their most concentrated liquid form — were released on February 24, 1984, and contain-

ed the conclusion "that there is insufficient evidence to support a cause and effect relationship between herbicide exposure and adverse health in the Ranch Hand group at this time." . . ..

(10) The Veterans' Administration has not promulgated permanent regulations setting forth specific guidelines, standards, and criteria for the adjudication of claims for Veterans' Administration disability compensation based on exposure to herbicides containing dioxin . . ..

(11) Such claims present adjudicatory issues which are significantly different from issues generally presented in claims based upon the usual types of injuries incurred in military service, particularly with respect to the difficulty of determining a connection between exposure during service and increased risk of adverse health effects (especially those involving long latency periods and ambiguities of causation) arising thereafter.

(12) It has always been the policy of the Veterans' Administration and is the policy of the United States, with respect to individual claims for service connection, that when, after consideration of all evidence and material of record, there is an approximate balance of positive and negative evidence regarding the merits of an issue material to the determination of a claim, the benefit of the doubt in resolving each issues will be given to the claimant.

. . . . The purpose of this Act is to ensure that Veterans' Administration disability compensation is provided to veterans who were exposed during

> service in the Armed Forces in the Republic of Vietnam to a herbicide containing dioxin . . . (and dependency and indemnity compensation is provided to survivors of such veterans) for all disabilities arising subsequent to such service that are connected, based on sound scientific and medical evidence, to such exposure (and for all deaths resulting from such disabilities).

The Administrator of Veterans' Affairs under section 354(a)(2) of title 28, United States Code, if this Senate version is adopted, is ordered to prescribe regulations to establish guidelines, standards and criteria for the resolution of claims for benefits based on a veteran's exposure during service in the Republic of Vietnam prior to May 8, 1975, to a herbicide containing dioxin. The statute provides that "the benefit of the doubt in resolving each . . . issue will be given to the claimant."

In providing guidelines based on scientific research and other data the Administrator must "take into account whether the findings are statistically significant, are capable of replication, and withstand peer review." His evaluation must be made "after receiving the advice of the appropriate panel of the Scientific Council of the Advisory Committee on Environmental Hazards."

The diseases referred to in the proposed Act are:

> (1) a soft tissue sarcoma, if developed to a degree of disability of 10 per centum or more within thirty years after the date of last departure from the Republic of Vietnam during such service,
>
> (2) porphyria cutanea tarda, if so developed within one year after the date of last departure from the Republic of Vietnam during such service,

> (3) chloracne, if so developed within one year after the date of last departure from the Republic of Vietnam during such service, or
>
> (4) any other disease with respect to which the panel of the Scientific Council . . . finds that there is sound scientific or medical evidence indicating a connection to exposure to such herbicide and which has so developed within any maximum period of time after departure from the Republic of Vietnam during such service. Act § 5a(a)(B)(i).

The Advisory Committee on Environmental Hazards (the "Committee") is, under the Senate version, to consist of fifteen members appointed by the Administrator of Veterans' Affairs after requesting and considering recommendations from veterans' organizations, including eleven individuals (of whom none may be members of the Armed Forces or be employed by the Veterans Administration or the Department of Defense and not more than three may be Federal employees of other departments or agencies), appointed in consultation with the Director of the National Institutes of Health. Three will be recognized medical or scientific authorities in fields pertinent to understanding the health effects of exposure to dioxin; three will be recognized medical or scientific authorities in fields pertinent to understanding the health effects of exposure to ionizing radiation in exposed populations; and four will be individuals from the general public, including at least one disabled veteran, having a demonstrated interest in and experience relating to veterans' concerns regarding exposure to dioxin or ionizing radiation.

It is obvious that Congress, in this Senate version of the Act, recognized the government's obligation to compensate all exposed veterans so long as a reasonable basis for finding

causality exists. This is confirmed by the discussion in the Congressional record. Senator Cranston, sponsor of the bill in the Senate, noted:

> In addition to the need to proceed with this legislation based on the long-standing concerns of the veterans, their families, and others, two recent events involving these issues in the Federal judiciary have added a further sense of urgency to our efforts. First, on May 7 came the settlement in a New York district court class action lawsuit between Vietnam veterans and the companies that manufacture agent orange. Then on May 10 came the decision in a Federal court in Utah in the radiation exposure class action ordering damages to be paid to 10 civilians exposed to radiation from test explosions at the Nevada test site. . . .
>
> [T]he basic impact of S. 1651 [H.R. 1961] is to require the VA, through a rulemaking process allowing for public participation, to develop binding regulations for the adjudication of agent orange . . . claims in order to bring about consistency in the process and the results . . . .
>
> Of the 20,000 agent orange-related claims filed, only 15 have been granted as follows:
>
> Of 17 P.C.T. [porphyria cutanea tarda, a rare liver condition] cases filed, only 2 have been granted...
>
> Although 13 chloracne cases have been granted service connection, the VA reported in a May 17, 1984, letter . . . that it appeared after review that none of the cases, in fact, involve chloracne.
>
> Of the five cases of soft tissue sarcoma filed by Vietnam veterans, none has been granted.

130 Cong.Rec. S6145 (daily ed. May 22, 1984).

Senator Simpson, Chairman of the Veterans' Affairs Committee made a promise for the future when he noted:

> This country has never turned its back on its veterans, and never will . . . . All of us would desperately wish to do "the right thing" for these veterans. . . .

Id. at S6157.

The House of Representatives' version of the Act provides a presumption of service connection with respect to chloracne, soft tissue sarcoma and porphyria cutanea tarda. *See* H.R.Rep. No. 592, 98th Cong., 2d Sess. (1984) (Committee report on H.R. 1961, Agent Orange and Atomic Veterans Relief Act).

Both the House and Senate bills reflect the concern of Congress and an agreement to provide full compensation if scientific studies support this result. Currently there also is pressure in Congress to adopt legislation that would provide for indemnification of contractors such as the defendants in this case. H.R. 4199, 98th Cong., 1st Sess. (1984).

VI. CONCLUSION CONCERNING FAIRNESS OF SETTLEMENT

Based on all the information presently available, the procedural posture of the litigation, the difficulty any plaintiff would have in establishing a case against any one or more of the defendants, the uncertainties associated with a trial, and the unacceptable burdens on plaintiffs' and defendants' legal staffs and the courts, the proposed settlement appears to be reasonable. It appears to be in the public's as well as the parties' interest.

Even though the evidence presented to the court to date suggests that the case is without merit, many of those who testified at the Fairness Hearings indicated that they sought its prosecution not for money but for public vindication. It may be, to paraphrase Sir James George Frazer, that the litigation itself has served a useful function: like many trials, the "main object of the ceremony . . . is simply to effect a total clearance of all the ills that have been infecting a people." J.G. Frazer, *The Golden Bough* 666 (abridged ed. 1958)

The publicity attendant upon the settlement and subsequent Fairness Hearings where the court heard almost five hundred witnesses from all parts of the nation, undoubtedly did serve once again to bring to the public's attention how unfairly Vietnam veterans have been treated. They have been abused, rejected and humiliated after serving bravely. Their voices should be heeded by the government and public for whom they fought.

In considering the fairness of the settlement, the court has looked to other sources of aid either presently available to the class or of potential benefit in the future. The government must be considered the source of ultimate protection whether or not there be a satisfactory demonstration of causal relationship to Agent Orange as a result of ongoing or future scientifc studies. Government sources of aid exist and should continue to grow. Payment out of public funds is appropriate since many of the problems faced by Agent Orange-exposed veterans are due to Vietnam War-related factors other than the effects of toxic substances. The effects of combat as well as the disappointing reception Vietnam veterans received from the American public and inadequate help from their own government (as compared, for example, to that received by World War II veterans) has caused much emotional stress and physical pain.

Whether or not that pain was caused by Agent Orange it is shared by a disproportionately large number of Vietnam veterans. They and their families should receive recognition, medical treatment and financial support. Many lives have been broken by the Vietnam experience. The suffering ones deserve succor. Their children are also tormented, perhaps because of Agent Orange, but certainly as a secondary result of the family tensions directly traceable to the Vietnam confict. The negative ripple effects on other family members, the work place and other arenas of Vietnam veterans' lives have spread to all parts of our society and cannot be ignored. The injustices these brave men and women suffer poison the lives of all Americans, whether or not they served in Vietnam. The public received the "benefit" of combat service and should help defray the cost.

Obviously all the help necessary cannot come out of the settlement. No amount of money can compensate Vietnam veterans for the suffering they and their families have endured. At the hearings it was emphasized over and over again that money is not the primary issue. But money obviously must be an issue. It is crucial that one veteran, one family, should not be pitted against another on the question of who deserves and who gets help and in what amount.

Our country is rich in public and private resources of every kind. Those resources should be made available to members of the class as often as needed, close to their homes, and with as little bureaucratic red tape as possible.

In addition, there is a large, almost untapped source of voluntary aid from outside the Vietnam War veteran community. One important source is the veterans' peer group that substituted school or other activity for service in the armed forces. Many in this group are now successful lawyers, doctors, business persons and financially successful leaders of the

community. Undoubtedly their careers might have been retarded or ended had they served in Vietnam. They could now eradicate some remaining ill will and assist in national reconciliation were they to volunteer some of their talents, resources and influence to aid those who served in Vietnam.

VII. PLAN FOR DISTRIBUTION OF FUND

One hundred and eighty million dollars plus accrued interest from May 7, 1984 has been or will shortly be paid into the court. The fifty million already in the control of the Clerk of the the Court has been invested in United States treasury notes for reasons of safety, liquidity and substantial interest. Various measures for the protection of the funds have been ordered, including bonding of the custodians, advice on investment and control from an unpaid special master and auditing by the Administrative Office of the United States Courts without cost to the class.

For the guidance of the parties the following suggestions made during the Fairness Hearings should be considered in developing a plan for distribution of the settlement funds. These principles do not necessarily reflect the court's views but may serve to focus the parties' attention on some available options.

A. General Principles

Any committees or governing bodies of organizations set up to distribute settlement funds or otherwise assist Vietnam veterans and their families who may have been affected by Agent Orange should be comprised primarily of veteran representatives. The task of organizing representatives of Vietnam War veterans into an effective group that can make decisions which the veterans will support and that can speak to

the veterans with one voice must be given priority. With such an effective organization the $180,000,000 available from the settlement provides a powerful legal, medical political and social instrument. Without that cooperation the money may become a reason for divisiveness and disunity that may serve to weaken the just claims of the veterans and their ability to vindicate their rights. Veteran representatives should be selected in a manner that will further unite the class rather than promote division and discord. There are many able laypersons, lawyers, doctors and other professionals who served in Vietnam and were exposed to herbicides or who are spouses of those exposed.

Special Master Kenneth Feinberg will assist in such meetings as veterans' representatives may wish. Within a few months decisions will need to be made on a distribution plan; they should be made primarily by veterans, not by nonveteran lawyers. Nevertheless, pursuant to the settlement agreement, the court reserves final authority to approve and supervise any plan for use and distribution of settlement funds.

Similarly, a proportionate share of the funds set aside for Australian and New Zealand members of the class should be controlled by veterans of those countries. The court would consider a single payment made to a person or body of each of these two countries with further distribution being made by those on the scene. Having representative of these countries and the United States on a distribution agency is another alternative.

The primary responsibility for providing appropriate medical treatment for veterans and assuring adequate research into causation and cure must be assumed by the government.

Transaction costs in distributing the settlement funds must be kept to a minimum. Complex fact-finding should be avoid-

ed to reduce the need for attorneys' fees, experts' fees, and time consuming adjudications of individual claims.

It is not possible for all class members to receive significant individual compensation from the settlement funds.To the extent practicable, simple criteria for eligiblity should be established to assure acceptable targeting of limited settlement funds and to provide adequate notice of eligiblity to class members.

The plan should provide for those class members who, as yet, have not manifested any adverse health effects, but who may do so in the future.

It is better to make some immediate decisions concerning class benefits in order to get prompt aid to some members of the class. To wait for the development of the perfect plan is to lose much of the value of the settlement that makes money available immediately.

B. National Center for Vietnam Veterans Assistance

One message was heard repeatedly during the Fairness Heaings — that no one in government is listening to, or cares about, the special plight of the Vietnam Veteran and his or her family.

Some form of a National Center for Vietnam Veteran assistance should be funded to provide such Vietnam War veterans with a visible, central source of legal and political power. The Center could by appropriate grants provide legal assistance concerning claims against the Veterans Administration; undertake litigation to compel agencies of the government to comply with the law and assist Vietnam veterans; seek further legislation in the Congress and state legislatures to improve the lot of the Vietnam veteran; mobilize lawyers,

doctors, and the business and education communities to help Vietnam veterans and their families; encourage research and training for the medical profession in treating Vietnam veterans and their families; and undertake such other activities, including counseling and veteran advisory services, as will assist the Vietnam veterans and their families. Availability of money should not be permitted to sap the vitality of the many volunteers who now work for Vietnam veterans.

C. Veterans' Benefits

A simple benefits system should be established. The plan should be capable of ready implementation by an administering body such as a health or life insurance company exercising inexpensive ministerial functions.

If some form of proof of exposure to Agent Orange is required, the standard for certification should take account of the fact that many veterans — and particularly their widows and children — may have difficulty in authenticating claims.

Although it would be desirable in an ideal setting to compensate fully every veteran exposed to Agent Orange, there is considerable doubt that this can be accomplished. The limited size of the fund, the near impossibility of proving scientifically which adverse health effects are compensable and which are not, the persuasive evidence of need likely to accompany many individual applications, the danger that large compensation awards will further divide rather than unite the Vietnam veteran community — all of these considerations call into question the idea of providing substantial compensation for individual exposed veterans.

Various options might be considered as alternatives. A limited portion of the fund might be earmarked for all class

members filing claims who demonstrate both exposure to Agent Orange and the existence of adverse heatlh effects. An additional lump sum amount might be targeted to those veterans suffering from total physical disability or death from a disease such as cancer. A decreasing term life insurance program for all class members filing valid claims should also be considered. Compassion — not scientific proof — would be the underlying principle of such a program.

Care must be taken not to allow any benefits from the fund to be used to reduce aid to the veteran from other government and private sources. For example, at the hearings there were indications that some local welfare agencies are already seeking waivers from members of the class so that any benefits arising from the fund would be used to reimburse these agencies rather than those who should benefit from the settlement.

D. Genetic and Family Counseling

It has been recommended that a plan for genetic counseling should be made available to any service person and spouse. It should provide counseling and testing services to any member of the class who believes he or she has been exposed to Agent Orange and fears having children as a result. The purpose of such services would be to advise the veteran and his or her spouse of the possible risks in having children and to reassure them if no such risks appear likely. This service should be made available as soon as possible because many servicepersons are reaching the end of the period when they are likely to have children.

E. Children With Birth Defects

It is not now possible to attribute any particular birth defect or combination of such defects to Agent Orange exposure

of the father. Some veterans and their representatives indicate that a substantial fund should nonetheless be set aside to aid children of members of the class with birth defects. The heavy burden on families of veterans with such children warrants special treatment and compassion. The Fund should have a term of at least twenty-five years and should be able to solicit contributions from both private and public sources. Should proof of Agent Orange causation later become available, the government must assume responsiblity for compensating such defects as are shown to have been caused by Agent Orange exposure. *See,, e.g.*, statement of Senator Alan Cranston urging the VA "to develop approaches for compensation and health care for those affected children" following release of CDC Birth Defects Study. Houston Chronicle, Aug. 17, 1984, at 22, col. 2.

A Board consisting of representatives of the class, scientists, doctors, social workers, persons skilled in investment and others should be appointed to manage the fund. Veterans themselves with these and other skills should be appointed whenever possible. Among the duties of the Board should be: encouraging research concerning birth defects, monitoring research to determine if causal connections can be scientifically verified, and making single or annual grants to assist families with children with birth defects. Such assistance could include, to the extent that funds are available, payment of medical expenses, vocational training, scholarships, and special costs of care and help to ameliorate the difficulties of this portion of the class. Financial and social needs of the family would be appropriate criteria for eligibility.

Any aid should not reduce assistance or services available from other sources such as food stamps, insurance, Aid to Dependent Children or Social Security Disability payments. Families should be assisted in obtaining maximum help for

birth defect children from available and new public and other private services.

The problem of arranging fair and equitable distributions of funds or other aid to those most in need is particularly difficult because of the variations in services presently available for families with children with birth defects. Not only are there wide disparities in family income, but there are overlapping services and large gaps in available assistance from private insurance, public welfare, private foundations and charities and a host of educational, training and assistance programs mandated by state and federal laws. How aid to this one group of Vietnam veteran families can be arranged without upsetting intricate — but often quite unfair — balances that presently exist presents a challenge worthy of the most dedicated veteran leaders.

F. Legislation

Testimony at the Fairness Hearings indicated that federal and state legislation will be needed to implement any viable benefits program. For example, the funds paid to, or services rendered to, a veteran or his family should not be deemed taxable as income. Payments should not be used to reimburse public or private agencies or insurance companies, nor should they be used in computation of disability, welfare or other social benefits. The organizations set up to administer the funds should be tax exempt and may need other privileges requiring federal incorporation.

Federal legislation or congressional or executive intervention would also appear necessary as a response to the litany of criticisms levelled at the Veterans Administration during the nationwide Fairness Hearings. These criticisms range from bureaucratic inaction by the Veterans Admnistration and the

failure of the Veterans Administration to assist Vietnam veterans living in rural areas to the absence of federal law permitting Veterans Administration treatment of veterans' spouses and children suffering from birth defects. Whether or not warranted, the perception of poor service to at least some veterans should probably be publicly addressed.

G. Schedule

October 26, 1984 was fixed as the last date, subject to an extension by the court, for those alleging presently manifested adverse health effects to file claims. Since the hearings revealed that some veterans still were not aware of the need to file a claim form, an extension until January 2, 1985 is granted.

By November 21, 1984, a tentative plan for disposition of the fund must be filed by plaintiffs. Most claims will probably have been filed by early October so that this extension does not require putting off the dates set for consideration of a distribution plan. On or about December 7, 1984, the court intends to discuss the proposed plans with counsel, a small group of veteran representatives and special masters. Public notice of a proposed plan should be given as the court may direct. A final order on settlement fairness and fees should be issued at the end of 1984 to permit appeals. Hearings on the plan are presently scheduled for March 5, 1985 at 10:00 a.m. in the federal courthouse in Brooklyn, New York.

H. Attorneys' Fees and Disbursements

The court has already provided that applications for attorneys' fees and disbursements must be submitted by August 31, 1984. Hearings on these fees are set for September 26, 1984 in the United States District Courthouse, 225 Cadman Plaza East, Brooklyn, New York. The applications and sup-

porting data must be in the form provided by the Magistrate in her order docketed on July 24, 1984. Any person may examine the applications and be heard in writing or orally as the court may allow at the hearing on attorneys' fees.

I. Cases Against The Government

Plaintiffs continue to press direct claims against the government for injuries suffered by members of the class. Motions by the government returnable in October to dismiss these claims have not yet been decided. In addition there are third-party claims pending against the government by defendants seeking contribution for their expenditures caused by this litigation on the theory that, if anyone was legally responsible for the alleged injuries to the class, it was the government; the government's appeal from an order permitting such claims was dismissed by the Court of Appeals on September 21, 1984. Delays because of appeals and motions coupled with the refusal by the Department of Justice to participate in settlement discussions make it impossible to dispose of these matters at this time.

VIII. CONCLUSION

In conclusion it is well to remind ourselves of President Lincoln's admonition which is as relevant now, almost fifteen years after the end of the Vietnam war, as it was six score years ago. In his Second Inaugural Address he urged us "to bind up the nation's wounds; to care for him who shall have borne the battle and for his widow, and his orphan — to do all which may achieve and cherish a just and lasting peace among ourselves . . . ." It is time for the government to join with plaintiffs and defendants in even greater efforts toward this noble goal. Whether their hurt can be traced to Agent Orange or whether they are merely "casually unfor-

tunate," C.L. Black, Jr., *The Human Imagination in the Great Society,* 5 (1983), is beside the point in the broader context of the nation's obligations to Vietnam veterans and their families.

IX. ORDER

The settlement is approved subject to hearings on fees and preliminary consideration of plans for distribution. This order is not final.

SO ORDERED.

APPENDIX A

SETTLEMENT AGREEMENT

The parties to the above-entitled action, by and through their attorneys, propose the following Settlement Agreement (the "Agreement") for the Court's approval.

WHEREAS, the above-entitled action has been brought by the plaintiffs as a class action pursuant to Rule 23 of the Federal Rules of Civil Procedure, on behalf of themselves and all other persons similarly situated; and

WHEREAS, the Court has, by order dated December 16, 1983, certified this action as a class action, and defined a class (the "Class"), under Rules 23(b)(3) and 23(b)(1)B) of the Federal Rules of Civil Procedure; and

WHEREAS, the attorneys for the Class represent that notice to the members of the Class has been provided substantially as required by that order; and

WHEREAS, the Seventh Amended Complaint and all predecessor complaints (the "Complaint") assert certain claims against the defendants for injuries allegedly resulting from exposure to phenoxy herbicides composed in whole or in part of 2,4,5-trichlorophenoxyacetic acid, *to wit,* Agent Orange, Agent Orange II, Agent Purple, Agent Pink and Agent Green (hereinafter collectively referred to as "Agent Orange"), which were manufactured for or sold to the United States by various defendants for use in Vietnam; and

WHEREAS, all of the defendants have been served or have appeared and have filed answers or are deemed to have answered and denied all of the material allegations of the Complaint, and have asserted affirmative defenses that the claims are without merit and are barred in whole or in part; and

WHEREAS, the attorneys for the Class have conducted a thorough study and investigation of the facts and the law relating to the matters set forth in the Complaint, and have conducted extensive pretrial discovery proceedings, including oral depositions of numerous of the defendants' present and former employees and of present and former government employees, and have examined and analyzed voluminous doc umentation relating to the subject matter of the Complaint; and

WHEREAS, the defendants deny and disclaim any liability or wrongdoing whatsoever and believe that this action is without merit; and

WHEREAS, the attorneys for the Class have agreed to settle the claims alleged in this action pursuant to the terms and provisions of this Agreement after taking into account the substantial benefits that the members of the Class will receive as a result of the settlement, the expense, burdens and diversion of protracted litigation, including lengthy appeals, the risk of not prevailing at trial, and the conclusion reached by the attorneys for the Class that the settlement is fair, reasonable and adequate and in the best interests of the Class; and

WHEREAS, the defendants desire to avoid the expense, burdens and diversion of protracted litigation, including lengthy appeals, the risk of not prevailing at trial, and desire to put at rest all controversy between the plaintiff Class and defendants, and their foreign and domestic predecessors, successors, parents, subsidiaries, affiliates and insurers, as well as any of their stockholders, directors, officers, employees and agents, and desire to settle, compromise and terminate this action, all claims asserted, and all other claims by any member of the Class hereafter arising against the defendants that are,

or could in the future be, based on or arise out of any of the matters alleged in the Complaint; and

WHEREAS, all parties to this Agreement desire and intend that the comprehensive settlement and compromise provided for herein shall extend to and include all claims alleged in the Complaint and all cross-complaints alleged in this action (but excluding all claims against the United States), and that this action shall be dismissed with prejudice and without costs to any party;

NOW, THEREFORE, it is hereby agreed, by and among the undersigned as of May 7, 1984, that this action shall be compromised and settled, subject to the approval of the Court, upon and subject to the following terms and conditions:

1. Subject to all of the conditions contained in this Agreement, defendants will pay or cause to be paid on their behalf one hundred eighty million ($180,000,000.00) (the "Settlement Amount") in full and final settlement of all claims for compensatory damages against them, and their foreign and domestic predecessors, successors, parents, subsidiaries, affiliates and insurers, as well as any of their stockholders, directors, officers, employees and agents, that arise out of or be based on, any of the matters alleged in the Complaint. The unpaid amount of the Settlement Amount shall bear simple interest at the Average Prime Rate (hereinafter defined) from May 7, 1984 through the date of payment. At the time any part of the Settlement Amount is paid, accrued interest shall be payable on that part. "Average Prime Rate" shall mean the sum of the publicly announced prime commercial lending rates of The Bank of New York on the last business day of each month that payments hereunder have been outstanding, divided by the number of months that the payment(s) have been outstanding. All calculations shall be bas-

ed on a 360-day year. Payment of the Settlement Amount with interest accrued thereon shall be made by defendants within 10 days after an order approving this Agreement has been signed by the Court; *provided however,* that any defendant may, at its option, pay any or all of its share of the Settlement Amount with interest accrued thereon in advance of the foregoing date. All amounts paid by defendants shall be paid into a fund (the "Fund") to be established, maintained and administered by the Court. No distribution to Class members, or payment of attorneys' fees or out-of-pocket disbursements, is authorized until after an order approving this Agreement has become final and all appeals and requests for review have been decided.

2. The agreement by the defendants to pay the Settlement Amount with interest accrued thereon is not intended to and shall not be deemed to create a joint or joint and several obligation on the part of the defendants. Each defendant shall be obligated solely to pay that portion, with interest, of the Settlement Amount set forth in a sealed agreement delivered to the Honorable Jack B. Weinstein, Chief Judge, United States District Court for the Eastern District of New York, on May 7, 1984. Failure of any defendant to fulfill its obligations as set forth in said agreement or to abide by any term or condition of this Agreement shall not abrogate this Agreement as to any other defendant or increase any obligation of any other defendant under this Agreement. Each defendant shall provide financial security for its payment in a form acceptable to the Court after consultation with the parties.

3. Defendants will advance sums in amounts to be set from time to time by the Court, in proportion to their contributions, to the Settlement Amount, and all expenses paid from sums advanced by defendants shall be divided and assessed as determined by the Court.

4. The Fund shall be maintained and administered by the Court and shall be under the Court's continuous jurisdiction, control and supervision to assure that the Fund shall earn the maximum interest consistent with safety and that all disbursements are properly made. The Court may, with or without consulting the parties, appoint and remove, with or without cause, auditors, special masters, disbursing agents, consultants, counsel or others and enter into appropriate contracts or authorize its agents or special masters to do so. The expenses of persons appointed by the Court shall be payable out of the Fund in accordance with Court order. All expenses of administering the Fund, including the cost of preparing and disseminating notice of settlement to the Class and of validating and determining claims, shall be paid from the Fund. All interest and earnings of the Fund shall accumulate and become part of the Fund. After 25 years from the date of this Agreement, any balance remaining in the Fund shall be disposed of in such manner as the Court may direct. Except as specifically set forth in this Agreement, defendants shall have no responsibility or obligation with respect to the Fund or distributions therefrom.

5. Defendants and their foreign and domestic predecessors, successors, parents, subsidiaries, affiliates and insurers, as well as any of their stockholders, directors, officers, employees and agents, are not, and in the future shall not be, subject to liability or expense of any kind to any member of the Class in respect of any claim arising out of the subject matter of the Complaint, except as to their obligations to make payments pursuant to this Agreement. Claims against the Fund shall be the exclusive remedy of all Class members against the defendants or any of their foreign and domestic predecessors, successors, parents, subsidiaries, affiliates and insurers, as well as any of their stockholders, directors, officers, employees and

agents, and all members of the Class are forever barred from instituting or maintaining any action against any of the defendants, or any of their foreign and domestic predecessors, successors, parents, subsidiaries, affiliates and insurers, as well as any of their stockholders, directors, officers, employees and agents, arising out of or relating to, the subject matter of the complaint.

6. The Fund shall indemnify all defendants, and their foreign and domestic predecessors, successors, parents, subsidiaries, affiliates and insurers, as well as any of their stockholders, directors, officers, employees and agents, for all final compensatory judgments (excluding settlements), exclusive of costs and attorneys' fees, rendered against any of them in all state-court actions alleging harm caused by exposure to Agent Orange in or near Vietnam, not to exceed an aggregate amount of $10 million. The Court may, however, allow additional payments of indemnification after January 1, 1990, if, in the Court's discretion, payments to members of the Class are assured.

7. In the distribution of the Fund arrangements will be made to assist children born on or after January 1, 1984. Such afterborn children by whom or on whose behalf an election is made to receive benefits from the Funds shall be subject to the terms and conditions of paragraph 5 hereof as if members of the Class.

8. The Class specifically includes persons who have not yet manifested injury. All persons who are otherwise qualified but who previously requested exclusion from the Class shall have the opportunity to withdraw their exclusion within a reasonable time as determined by the Court, and shall thereby be included in the Class.

9. Any defendant shall have the right to withdraw from

this Agreement if it believes in its discretion that the number of persons who have elected to be excluded from the Class is substantial. Any defendant may exercise that right no later than 20 days before the date for the first public hearing scheduled in accordance with Rule 23(e) of the Federal Rules of Civil Procedure to consider approval of the settlement of this action. If any defendant withdraws from this Agreement pursuant to this paragraph, the Agreement shall remain in full force and effect as to the plaintiff Class and as to the remaining defendants in accordance with their proportionate shares of the Settlement Amount.

10. Neither this Agreement nor any proceeding taken hereunder shall be construed as or deemed to be evidence or and admission or concession by any defendant of any liability or wrongdoing whatsoever, which is expressly denied by each defendant, or on the part of the plaintiffs of any lack of merit in their claims. None of the provisions of this Agreement, nor evidence of any negotiations or proceedings in pursuance of the compromise and settlement herein, shall be offered or received in evidence in this action or any other action or proceeding as an admission or concession of liability or wrongdoing of any nature on the part of any of the defendants, or for any other purpose whatsoever (including without limitation, to establish jurisdiction, venue or waiver of any affirmative defense), except to enforce the terms and provisions hereof.

11. The plaintiffs and defendants expressly reserve all rights and claims which they now have, or may at any time be entitled to assert against the United States, including its officers, departments, agencies, representatives, agents and employees. Plaintiffs further reserve all such rights and claims against every person (a) not a party to this action, and (b) not a foreign and domestic predecessor, successor, parent, subsidiary, af-

filiate and insurer, stockholder, director, officer, employee or agent of a defendant. Each defendant further reserves all such rights and claims against every persons (a) not presently a party to this action, and (b) not a foreign or domestic predecessor, successor, parent, subsidiary, affiliate, insurer, stockholder, director, officer, employee or agent of another present defendant.

12. The attorneys for the Class shall return to each defendant, respectively, all documents in their possession or control produced by that defendant, including microfilm and all copies, within 30 days after final judgment is entered in this action and is no longer subject to appeal or review, or if plaintiffs pursue claims against the United States within one year after the date of this Agreement, within 30 days after final adjudication of those claims, whichever is later.

13. The settlement of this action shall become effective only when the judgment contemplated by this Agreement dismissing with prejudice and without costs both plaintiffs' claims, including claims for punitive damages, and defendants' cross-claims becomes final and is no longer subject to appeal or review.

14. Any award of plaintiffs' attorneys' fees and necessary out-of-pocket disbursements incurred by them in the prosecution and settlement of this action shall be payable exclusively from the Fund, and defendants shall not be liable for any such payment.

15. All of the undersigned attorneys severally represent that they have been duly authorized to enter into this Agreement.

16. This Agreement will be null and void unless the Court expressly approves it pursuant to Rule 23(e) of the Federal

Rules of Civil Procedure as a fair, reasonable and adequate settlement of this action.

17. In the event this Agreement is not approved by the Court, or does not become effective for any reasons, then this Agreement shall be null and void for all purposes and of no further force and effect, subject to the provisions of paragraphs 3 and 10 hereof, and all sums remaining in the Fund shall be repaid to the defendants forthwith together with all interest thereon, in accordance with their prior contributions to the Fund.

18. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument.

19. The Court shall retain jurisdiction over the Fund pending its final disposition.

APPENDIX B
ORDER FOR HEARINGS ON FAIRNESS OF SETTLEMENT PLUS ATTACHMENTS

ORDER CONCERNING NOTICE TO CLASS MEMBERS AND HEARING ON PROPOSED SETTLEMENT

The plaintiffs have submitted to the Court, for approval under Federal Rule of Civil Procedure 23(e), a Settlement Agreement made as of May 7, 1984. The Court has preliminarily determined that the Settlement proposed therein of all claims of the plaintiff class against the defendants is within the range of possible approval.

Accordingly, it is ORDERED:

1. The Court will hold hearings purusant to Rule 23(e) at the times and places indicated below for the purpose of considering whether the proposed Settlement Agreement is fair, reasonable and adequate and whether the Settlement should therefore be approved.

August 8, 9, 10, 1984, United States District Court, 225 Cadman Plaza East, Brooklyn, N.Y. 11201.

August 13, 14, 1984, United States District Court, 219 South Dearborn Street, Chicago, Illinois 60604

August 16, 17, 1984 United States District Court, 515 Rusk Avenue, Houston, Texas 77002-2696

August 20, 21, 1984 United States District Court, 75 Spring Street, S.W., Atlanta, Georgia 30303

August 23, 24, 1984 United States District Court, 450 Golden Gate Avenue, San Francisco, California 94102

2. Notice concerning these hearings and the proposed Settlement shall be given to members of the class as follows by the Plaintiffs' Management Committee ("the Commititee"), with the expenses attendant thereto to be paid out of funds to be advanced by the defendants under the terms of the Settlement Agreement:

(a) The Notice attached as Exhibit No. 1, shall be mailed by first class United States mail, on or before June 29, 1984, to all members of the class known to the Committee, including but not limited to all those to whom the notice previously given on or about March 9, 1984 was mailed and additionally every other member of the class whose name and address has been received by the Committee thereafter. The Committee shall maintain a record of the name and address of each person to whom the Notice is mailed, and shall file such record with the Court within 30 days thereafter.

(b) The Notice attached as Exhibit No. 2 shall be published no later than June 29, 1984, in the following newspapers and magazines:

The nationwide Sunday edition of the New York Times

U.S.A. Today

Air Force Times

Army Times

Navy Times

The Sunday editions of Newsday, Chicago Tribune, San Francisco Chronicle, Atlanta Constitution and Houston Chronicle.

The ten largest circulation newspapers in Australia, including the Australian

The five largest circulation newspapers in New Zealand, including the Dominion.

(c) The Notice attached as Exhibit 3 shall be mailed by first class United States mail, on or before June 29, 1984, to each person who requested exclusion from the class pursuant to the prior class notice given on or about March 9, 1984. The Committee shall serve on defendants and file each response to this Notice with the Court within five days after receipt.

5. The Court will consider at a later time, following further notice to class members, the manner in which the proceeds of the Settlement, if the Settlement Agreement is approved, are to be allocated and distributed among class members.

DATED: Brooklyn, New York

This 11th day of June, 1984.

Jack B. Weinstein, Chief Judge
United States District Court
Eastern District of New York

NOTICE OF PROPOSED SETTLEMENT OF CLASS ACTION

YOU ARE HEREBY NOTIFIED OF A PROPOSED SETTLEMENT OF THIS CLASS ACTION, OF HEARINGS TO BE HELD BY THE COURT TO DETERMINE WHETHER IT SHOULD BE APPROVED, AND OF WHAT YOU MUST DO IF YOU BELIEVE YOU HAVE A CLAIM FOR ADVERSE HEALTH EFFECTS ALLEGEDLY RELATED TO AGENT ORANGE EXPOSURE IN OR NEAR VIETNAM.

1. *The Class.*

This Court has previously certified a plaintiff class consisting of those persons who were in the United States, New Zealand or Australian Armed Forces at any time from 1961 to 1972 who were injured while in or near Vietnam by exposure to "Agent Orange" or other phenoxy herbicides, including those composed in whole or in part of 2,4,5-trichlorophenoxyacetic acid or containing some amount of 2,3,7,8-tetrachlorodibenzo-p-dioxin (collectively referred to as "Agent Orange"). The class also includes spouses, parents and children born before January 1, 1984, directly or derivatively injured as a result of the exposure.

On or about March 9, 1984, notice was given to advise class members of the certification of a class under Rule 23(b)(3) and of their right to request exclusion from the class. All persons who did not request exclusion on or before May 1, 1984, as provided in that notice, are members of the class for the purposes of the proposed Settlement if they fall within the above class definition. Those persons who requested exclusion are being sent a separate notice, pursuant to which they may withdraw such requests and become eligible to participate in the proposed Settlement if it is approved by the Court.

2. The Litigation And The Proposed Settlement.

This litigation was brought on behalf of the above defined class against seven chemical company defendants, Dow Chemical Company, Monsanto Company, T H Agriculture & Nutrition Company, Inc., Diamond Shamrock Chemicals Company, Uniroyal, Inc., Hercules Incorporated and Thompson Chemicals Corporation. The plaintiff class representatives (as appointed by the Court) have sought recovery for various injuries claimed to have resulted from exposure to Agent Orange in or near Vietnam, including among others, various health-related effects upon servicepersons, birth defects to their children and miscarriages by their wives. Defendants denied and continued to deny any liability or wrongdoing.

The attorneys for the class representatives and the attorneys for all of the defendants have entered into a Settlement Agreement, made as of May 7, 1984, which is subject to and conditioned upon the Court's approval of its terms. Under the Settlement, if it is approved, the defendants collectively will pay One Hundred Eighty Million Dollars ($180,000,000) plus interest at the average prime rate from May 7, 1984 to the date of payment, into a Settlement Fund ("the Fund") to be established and supervised by the Court for the payment of class members' claim.

A copy of the Settlement Agreement is attached hereto. Although a summary of its principal terms follows, you should examine the Agreement itself. Nothing in this Notice shall be construed to alter the terms of that Agreement.

If the Settlement is approved by the Court, the defendants' payments into the Fund will dispose of all claims against them asserted in this litigation or arising out of or based upon the matters alleged in this litigation. The

defendants will also be entitled to an indemnity out of the Fund up to the total amount of $10 million for judgments that might be rendered against them in certain state-court cases also involving alleged Agent Orange injuries. The Court may allow additional payments of indemnification after January 1, 1990 if, in the Court's discretion, payments to the members of the class are assured.

All payments by the defendants will be made no later than ten days after an order approving the Settlement Agreement has been signed by the Court. The Settlement Agreement allows any defendant to withdraw from the Settlement up to 20 days prior to the Court's first hearing to consider approval of the Settlement in the event it determines that the number of persons who have elected to be excluded from the class is substantial.

The Settlement Agreement confirms that the class includes persons who have not yet manifested injury.

The Settlement Agreement also provides that persons who have previously requested exclusion from the class on or before May 1, 1984 may participate in the Settlement by withdrawing their exclusions.

The Settlement Agreement further provides that arrangements will be made to assist afterborn children from the Fund.

Both the plaintiffs and the defendants reserve all of their rights to make claims against the United States Government and any person or company that is not a defendant or a predecessor, successor, parent, subsidiary, affiliate or insurer of a defendant.

The plaintiff class representatives and their counsel have concluded, after taking into account the many sharply contested issues involved, the risks and costs attending further

prosecution of this litigation, and the benefits to be received pursuant to the proposed Settlement, that settlement of this litigation upon the terms provided in the Settlement Agreement will be in the best interests of the class.

3. *Hearings To Consider Approval Of The Settlement Agreement.*

The Settlement Agreement will not become effective unless and until the Court decides that it should be approved as a fair, reasonable and adequate compromise of the aggregate claims of the plaintiff class as a whole. In order to assist the Court in making this decision, the Court will hold hearings ("the fairness hearings") in five cities in various parts of the United States during the month of August, 1984, at the times and places set forth at the end of this Notice. Following those hearings, the Court will determine whether the proposed Settlement, the principal terms of which are described above, should be approved. THE ONLY QUESTION TO BE DECIDED AT THIS TIME IS WHETHER THIS SETTLEMENT AS A WHOLE IS FAIR, REASONABLE AND ADEQUATE.

All written objections to the Settlement should be submitted to the Clerk in writing by July 30, 1984, at the address given at the end of this Notice. Class members or their reprsentatives may appear at any of the hearings and any objections they have will be heard by the Court. Any person who wishes to be heard should notify the Clerk on or before July 30, 1984, at the address given at the end of this Notice, stating the amount of time he or she requests.

If the Court approves the proposed Settlement, it will subsequently conduct further proceedings with respect to the question of allocation and distribution of the Settlement Fund to qualifying class members in satisfaction of

their claims for injuries allegedly related to Agent Orange exposure in or near Vietnam.

The Court recognizes that the question of allocation and distribution of the Settlement Fund to class members involves complex issues that will require extensive further study, as well as input from Vietnam veterans, and therefore will not make any decision on this question at the present stage of the proceedings. The Court does, however, actively solicit and encourage and will consider recommendations and suggestions on this question from any party to the litigation, Vietnam veterans and other interested persons. Any such recommendations and suggestions may be submitted in writing at the address given at the end of this Notice, and will be subject to preliminary oral discussion at the hearings scheduled by this Notice.

The Court is deferring for future consideration the question of fees and expenses to be awarded to plaintiffs' counsel from the Fund. The Court has determined that Rule 5 of the U.S. District Court for the Southern and Eastern Districts of New York should not be applied in this litigation because of the need for continued intensive work by the attorneys until the close of the fairness hearings and because of the complexity of the fee applications. *Cf. In Re "Agent Orange" Product Liability Litigation,* MDL No. 381, P.T.O. 90, 100 F.R.D. 778, 780 (E.D.N.Y. 1984) (discretion under local Rules). All applications for such awards of attorneys' fees and expenses through the completion of the fairness hearings will be filed with the Clerk no later than August 31, 1984, and will be available for inspection in the Clerk's Office, United States Courthouse, 225 Cadman Plaza East, Brooklyn, N.Y. 11201 during business hours. The Court will hold a hearing on September 24 and 25, 1984 at the Courthouse in Brooklyn at which class members will be given an opportunity to

raise any objections they might have to such applications for fees and expenses.

4. *What You Must Do If You Believe You Have Adverse Health Effects Related To Agent Orange Exposure In Or Near Vietnam And Wish To Make A Claim For Such Effects.*

THE SETTLEMENT FUND WILL BE UTILIZED TO COMPENSATE CLASS MEMBERS FOR CERTAIN ADVERSE HEALTH EFFECTS ALLEGED TO BE RELATED TO AGENT ORANGE EXPOSURE. If the Settlement is approved, a proposed plan for the allocation and distribution of the Settlement Fund to class members will be developed and considered by the Court in subsequent proceedings. The following is a brief outline of the basic elements of the plan that the class reprsentatives have indicated that they expect to propose to the Court;

A. A portion of the Fund – in an amount to be determined after the claims of class members have been formally submitted – will be allocated and distributed to class members who suffer from presently manifested adverse health effects. It is not possible for all class members, regardless of the nature and/or degree of injury, to receive compensation. Accordingly, compensation under the Fund may be limited to designated kinds of adverse health effects and degrees of disability – as yet to be determined – which will be defined in the plan. In addition, in order to assure that the Fund will not be exhausted before all potential claims for unmanifested adverse health effects are processed, it may prove necessary to adjust the compensation for presently manifested health effects so that funds are available for class members who may manifest compensable effects in the future.

B. A portion of the Fund – in an amount yet to be determined – will be set aside for future payment to those class members who have not, as yet, manifested adverse health effects but who may manifest such effects in the future. This will be done after determining the number and nature of the claims submitted now for presently manifested adverse health effects. Some of the portion of the Fund set aside for such future claims may later become available for additional payments to class members presently suffering from adverse health effects, depending on the number of future claims. The number and nature of such future claims should become clearer with the passage of time.

C. A portion of the Fund – in an amount yet to be determined – will be set aside to assist children, including both those born before 1984 (who are class members) and those born in or after 1984 (who, although not members of the class, may be entitled to assistance from the Fund). Those afterborn children who elect to apply for and receive assistance from the Fund will be subject to the terms and conditions of the Settlement.

D. The designated kinds of adverse health effects entitled to compensation, under the Fund may be modified periodically, bsed upon various scientific studies, some of which are now in progress.

E. In an effort to establish procedures and formulas for the allocation and distribution of the Fund, it is important to determine as soon as possible the current number and nature of the claims made by class members. The prompt filing of claims will allow determinations of both the amount of compensation to be paid each eligible claimant and the administrative mechanism best suited for the processing of such

claims. Therefore, all class members who desire compensation for adverse health effects which are already manifested must submit the enclosed Claim Form on or before October 26, 1984 (unless the Court determines that there is good and special reason for failure to meet this deadline). All class members who later learn of adverse health effects allegedly related to Agent Orange exposure that are not now known to them must return the Claim Form within 120 days thereafter.

F. The Claim Form is a preliminary but essential step. If you submit a Claim Form, you will be requested at a later time to submit medical proof and other important information in order to support your claim. The procedure for submitting such proof and other information, as well as other requirements pertaining to the processing and approval of the claim, will be included in the plan referred to above. NOT EVERYONE WHO SUBMITS A CLAIM FORM WILL RECEIVE COMPENSATION UNDER THE PLAN.

G. In developing and administering a plan for the allocation and distribution of the Fund to class members, there will be consultations with medical, scientific, economic, actuarial, insurance and other experts. In addition, representatives of the class – including Vietnam veterans – will play an important role in providing advice concerning the best methods for achieving maximum benefits for eligible class members and afterborn children.

All class members who submit Claim Forms will be mailed notices describing the proposed plan after it is developed and other class members will be given notice by publication. All class members will have full opportunity

to present to the Court at that time any objections they may have to that proposal, *whether or not they have objected to the Settlement as a whole.*

IF YOU WISH TO APPLY FOR COMPENSATION FOR ADVERSE HEALTH EFFECTS WHICH ARE ALREADY MANIFESTED, YOU MUST COMPLETE AND MAIL THE ENCLOSED CLAIM FORM POSTMARKED ON OR BEFORE OCTOBER 26, 1984. ADDITIONAL COPIES OF THE CLAIM FORM MAY BE OBTAINED BY WRITING TO THE ADDRESS LISTED IN PARAGRAPH 6 BELOW.

IF YOU FAIL TO FILE THIS CLAIM FORM POSTMARKED ON OR BEFORE OCTOBER 26, 1984, YOU WILL BE BARRED FROM MAKING ANY CLAIM FOR ANY ADVERSE HEALTH EFFECT THAT IS ALREADY MANIFESTED (UNLESS THE COURT DETERMINES THAT THERE IS A GOOD AND SPECIAL REASON FOR YOUR FAILURE TO MEET THIS DEADLINE). IF YOU LATER LEARN OF ADVERSE HEALTH EFFECTS, ALLEGEDLY RELATED TO AGENT ORANGE EXPOSURE THAT ARE NOT NOW KNOWN TO YOU, YOU MUST RETURN THE CLAIM FORM WITHIN 120 DAYS THEREAFTER.

NOW, THEREFORE, TAKE NOTICE:

1. All potential members of the plaintiff class as defined above and in the Notice given on or about March 9, 1984 who did not request exclusion on or before May 1, 1984 as provided therein are members of the plaintiff class and will be bound by the proposed Settlement, if it is approved, and by the Court's further orders in this litigation.

2. The Court will hold hearings at the times and places indicated below for the purpose of considering whether

the proposed Settlement is fair, reasonable and adequate and should be approved. Each hearing will commence at 10:00 a.m.

August 8, 9, 10, 1984, United States District Court, 225 Cadman Plaza East, Brooklyn, N.Y. 11201

August 13, 14, 1984, United States District Court, 219 South Dearborn Street, Chicago, Illinois 60604

August 16, 17, 1984, United States District Court, 515 Rusk Avenue, Houston, Texas 77002

August 20, 21, 1984, United States District Court, 75 Spring Street, S.W., Atlanta, Georgia 30303

August 23, 24, 1984, United States District Court, 450 Golden Gate Avenue, San Francisco, California 94102

If the Court approves the proposed Settlement following these hearings, it will enter a final judgment dismissing the claims of the class against these defendants, but reserving jurisdiction over the Settlement Fund for the purpose of allocating and distributing its proceeds to members of the Class and otherwise administering the Settlement.

3. Any class member who objects to the proposed Settlement may appear at any one of the hearings to show cause why it should not be approved by the Court or may communicate with the Court in writing prior to the hearing.

4. All class members who desire to claim compensation from the Settlement Fund for adverse health effects which are already manifested must complete and mail the attached Claim Form postmarked on or before October 26, 1984. Failure to do so will bar any such claim (unless the Court determines that there is good and special reason for failure to meet this deadline).

5. The Court will hold a subsequent hearing in United States District Court, 225 Cadman Plaza East, Brookyln, N.Y., on September 24 and 25, 1984, to consider whether the application for attorneys' fees and expenses to be filed with the Clerk no later than August 31, 1984, should be allowed in whole or in part. Any class member objecting to any such application will be heard at that time.

6. All written communications by class members to the Court other than Claim Forms should be addressed as follows:

Clerk, United States District Court for the Eastern
District of New York
P.O. Box 887
Smithtown, NY 11787

Claim Forms should be sent to the address shown on the Form.

DATED: Brooklyn, New York

This 11th day of June, 1984

Jack B. Weinstein, Chief Judge
United States District Court
Eastern District of New York

AGENT ORANGE CLAIM FORM

IMPORTANT: IF YOU BELIEVE YOU CURRENTLY HAVE ADVERSE HEALTH EFFECTS RELATED TO AGENT ORANGE EXPOSURE, RETURN THIS FORM NO LATER THAN OCTOBER 26, 1984. FAILURE TO RETURN THE FORM BY THAT DATE WILL PREVENT YOU FROM GETTING MONEY FROM THE SETTLEMENT FUND.

(Please type or print all answers. Additional pages may be attached for exterded answers.)

(To Be Filled Out By All Claimants)

Information about Claimant

Claimant's Name (Last, First, Middle): _____

Social Security Number: _____ - _____ - _____
(Or Identification Number for New Zealand and Australian Claimants)

Current Address (Street): _____

(City, State): _____ (Zip): _____

Home Telephone Number (Area Code, Number): (_____) _____

Work Telephone Number (Area Code, Number): (_____) _____

Sex (Circle One): (M)ale (F)emale

Date of Birth: _____ - _____ - _____
MONTH DAY YEAR

If you have an attorney, please give his or her name, address, and telephone numoer:

Attorney Name: _____

Firm Name: _____

Address (Street): _____

(City, State): _____ (Zip): _____

Attorney Telephone Number (Area Code, Number): (_____) _____

Information about Veteran

Veteran's Name (Last, First, Middle): _____

Social Security Number: _____ - _____ - _____
(Or Identification Number for New Zealand and Australian Claimants)

Current Address (Street): _____

(City, State): _____ (Zip): _____

Sex (Circle One): (M)ale (F)emale

Date of Birth: _____ - _____ - _____ Date of Death: _____ - _____ - _____
MONTH DAY YEAR (if deceased) MONTH DAY YEAR

When did Veteran serve in the Armed Services?

FROM: _____ - _____ - _____ TO: _____ - _____ - _____
MONTH DAY YEAR MONTH DAY YEAR

In what branch of service did Veteran serve? _____

Did Veteran serve in or near Vietnam? (Y)es (N)o

If yes, when? FROM: _____ - _____ - _____ TO: _____ - _____ - _____
MONTH DAY YEAR MONTH DAY YEAR

What were Veteran's primary duties (e.g., Primary MOS)? _____

_____

Where was Veteran located in or near Vietnam? _____

DATES

To the best of your knowledge, was Veteran sprayed with Agent Orange? (Y)es (N)o _____

Did Veteran see spraying of Agent Orange? (Y)es (N)o _____

Was Veteran in areas that had been previously sprayed with Agent Orange? (Y)es (N)o _____

How often was Veteran in areas sprayed with Agent Orange? (Circle One)

(C)onstantly (F)requently (S)eldom (N)ever

What is the reason you answered YES to any of the above questions? _____

_____

_____

_____

PART II

(To Be Filled Out If Claim Is Based On Adverse Health Effects On Veteran Alleged To Be Related To Agent Orange Exposure)

Please describe any medical problems of Veteran that any doctor has advised, or you believe, are related to Agent Orange:

_____

_____

_____

_____

If you have listed any problems above, please list here what effect, if any, such medical problems have had in Veteran's work, daily activities, etc.:

_____

_____

PART III

(To Be Filled Out If Claim Is Based On Adverse Health Effects On Children Alleged To Be Related To Agent Orange Exposure)

Please list here any birth defects of children which you believe are related to Agent Orange Exposure:

Name of Child	Birth Date	Mother's Name	Nature of Birth Defect
1.			
2.			
3.			

If any child is deceased, state name and date of death:

_____

Name and address of parent or guardian of each child if different from claimant:

_____

_____

PART IV

(To Be Filled Out If Claim Is Based On Miscarriages Alleged To Be Related To Agent Orange Exposure)

Please list here any pregnancies that did not result in a live birth which you believe are related to Agent Orange exposure:

Name and address of woman: _____

_____

Relationship to Veteran: _____

Date(s) of Miscarriage(s): _____

Has the woman received any professional counseling or advice on the possible effect of Agent Orange on her unborn children? (Y)es (N)o

Describe nature of such counseling or advice: _____

_____

NOTE:
IF YOU LATER LEARN OF ADVERSE HEALTH EFFECTS ALLEGEDLY RELATED TO AGENT ORANGE EXPOSURE THAT ARE NOT KNOWN TO YOU, *YOU MUST RETURN THIS FORM WITHIN 120 DAYS THEREAFTER.*

SIGNATURE OF CLAIMANT

ALL CLAIMS FOR PRESENT AND ADVERSE HEALTH EFFECTS THAT YOU BELIEVE ARE RELATED TO AGENT ORANGE EXPOSURE MUST BE SUBMITTED BY MAILING THIS FORM TO THE FOLLOWING ADDRESS ON OR BEFORE *OCTOBER 26, 1984:*

AGENT ORANGE COMPUTER CENTER
P.O. BOX 905
SMITHTOWN, NEW YORK 11787

NOTICE OF PROPOSED SETTLEMENT OF CLASS ACTION

YOU ARE HEREBY NOTIFIED OF A PROPOSED SETTLEMENT OF THIS CLASS ACTION, OF HEARINGS TO BE HELD BY THE COURT TO DETERMINE WHETHER IT SHOULD BE APPROVED, AND OF WHAT YOU MUST DO NOW IF YOU BELIEVE YOU HAVE A CLAIM FOR ADVERSE HEALTH EFFECTS RELATED TO AGENT ORANGE EXPOSURE IN OR NEAR VIETNAM.

This Court has previously certified a plaintiff class consisting of those persons who were in the United States, New Zealand or Australian Armed Forces at any time from 1961 to 1972 who were injured while in or near Vietnam by exposure to "Agent Orange" or other phenoxy herbicides, including those composed in whole or in part of 2,4,5-trichlorophenoxyacetic acid or containing some amount of 2,3,7,8-tetrachlorodibenzo-p-dioxin (collectively referred to as "Agent Orange"). The class also includes spouses, parents, and children born before January

1, 1984, directly or derivatively injured as a result of the exposure.

Defendants have denied any liability or wrongdoing.

The attorneys for the class representatives and the attorneys for all of the defendants have entered into a Settlement Ageement, made as of May 7, 1984, which is subject to and conditioned upon the Court's approval of its terms. Under the Settlement, if it is approved, the defendants collectively will pay One Hundred Eighty Million Dollars ($180,000,000), plus interest at the average prime rate from May 7, 1984 to the date of payment, into a Settlement Fund to be established and supervised by the Court for the payment of class members' claims.

The Settlement Agreement confirms that the class includes persons who have not yet manifested injury, and provides that arrangements will be made to assist afterborn children from the Fund.

The Settlement Agreement will not become effective unless and until the Court decides that it should be approved as a fair, reasonable and adequate compromise of the aggregate claims of the plaintiff class as a whole. In order to assist the Court in making this decision, the Court will hold hearings in the following places on the dates indicated:

August 8, 9, 10, 1984, United States District Court, 225 Cadman Plaza, East, Brooklyn, N.Y. 11201

August 13, 14, 1984, United States District Court, 219 South Dearborn Street, Chicago, Illinois 60604

August 16, 17, 1984, United States District Court, 515 Rusk Avenue, Houston, Texas 77002-2696

August 20, 21, 1984, United States District Court, 785 Spring Street, S.W., Atlanta, Georgia 30303

August 23, 24, 1984, United States District Court, 450 Golden Gate Avenue, San Francisco, California 94102

Each hearing will begin at 10:00 a.m. Any class member may raise any objection he or she may have to the proposed Settlement at any of the hearings. Written objections to the Settlement may also be submitted to the Clerk on or before July 30, 1984, at the address given at the end of this Notice.

If the Court approves the proposed Settlement, it will subsequently conduct further proceedings with respect to the question of allocation and distribution of the Settlement Fund to qualifying class members in satisfaction of their claims asserting injuries related to Agent Orange exposure in or near Vietnam. The Court solicits and encourages and will consider recommendations and suggestions on this question from any party to the litigation, Vietnam veterans and other interested persons. Class members will be given notice about the proposed plan for allocation and distribution of the Settlement Fund after it is developed, and will have full opportunity to present to the Court at that time any objections they may have to that proposal, *whether or not they have objected to the Settlement as a whole.*.

In an effort to establish procedures and formulas for the allocation and distribution of the Fund, it is important to determine as soon as possible the current number and nature of the claims made by class members. If you wish to apply for compensation for adverse health effects which are already manifested, you must complete and mail a claim form (which you may obtain as indicated below) postmarked on or before October 26, 1984. IF YOU FAIL TO FILE SUCH A CLAIM FORM POSTMARKED ON OR BEFORE OCTOBER 26, 1984, YOU WILL BE BARRED

FROM MAKING ANY CLAIM FOR ANY ADVERSE HEALTH EFFECT THAT IS ALREADY MANIFESTTED (UNLESS THE COURT DETERMINES THAT THERE IS A GOOD AND SPECIAL REASON FOR YOUR FAILURE TO MEET THIS DEADLINE).

In order to obtain further information about the Settlement, including a copy of the Settlement Agreement, and a Claim Form, call 1-800-645-1355 (from outside New York State) or 1-800-832-1303 (from within New York State), or write to the following adress:

Clerk, United States District Court for the Eastern District of New York
P.O. Box 8878
Smithtown, NY 11787

DATED: Brooklyn, New York

This 11th day of June, 1984

Jack B. Weinstein, Chief Judge
United States District Court
Eastern District of New York

SPECIAL NOTICE TO PERSONS WHO HAVE FILED EXCLUSION REQUEST FORMS IN THE AGENT ORANGE LITIGATION

Pursuant to a notice of this class action given on or about March 9, 1984, you sent to the Court an "Exclusion Request Form" which requested that you not be included in the class action. The enclosed notice to all class members describes a proposed settlement of the litigation. Pursuant to that settlement, a Fund of $180,000,000, plus interest from May 7, 1984, will be established for the benefit of the members of the plaintiff class. A part of the settlement provides that all persons such as yourself who

have filed "Exclusion Request Forms" be permitted to rejoin the class and become eligible to participate in the settlement if it is approved by the Court.

IF YOU WOULD LIKE TO REJOIN THE CLASS, YOU MUST FILL OUT THE ATTACHED FORM AND MAIL IT IN THE ENCLOSED PREPAID SELF-ADDRESSED ENVELOPE NO LATER THAN JULY 15, 1984. IF YOU DO NOT FILL OUT AND RETURN THE FORM BY THAT DATE, THEN YOU WILL BE BARRED FROM PARTICIPATING IN THE SETTLEMENT.

DATED: Brooklyn, New York

This 11th day of June, 1984

_____

Jack B. Weinstein, Chief Judge
United States District Court
Eastern District of New York

CLERK
UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK
P.O. Box 887
Smithtown, New York 11787

IN RE: "Agent Orange" Product Liability Litigation MDL #381

I have previously filed an "Exclusion Request Form." I hereby withdraw my exclusion and rejoin the class.

DATED: _____

SIGNATURE

NAME (Print): _____

ADDRESS: _____

CITY: _____

STATE: _____ ZIP: _____

SOCIAL SECURITY NO. _____

_____

APPENDIX C

PUBLISHED OPINIONS IN AGENT ORANGE LITIGATION

In re "Agent Orange" Product Liability Litigation, 475 F.Supp. 928 (E.D.N.Y.1979) (striking various allegations in the complaint); 475 F.Supp. 928 (E.D.N.Y.1979) (stay of plaintiffs' requests for declaratory and injunctive relief relating to banning of 2,4,5-T); 475 F.Supp. 928 (E.D. N.Y.1979) (summary judgment in favor of defendant Northwest Industries, Inc.); 506 F.Supp. 737 (E.D.N.Y.1979) (denial of defendants' motion to dismiss for failure to state a claim under federal common law), *rev'd,* 635 F.2d 987 (2d Cir.1980), *cert. denied,* 454 U.S. 1128, 102 S.Ct. 980, 71 L.Ed.2d 116 (1981); 506 F.Supp. 750 (E.D.N.Y.1980) (order requiring government to preserve documents relevant to the litigation); 506 F.Supp. 750 (E.D.N.Y.1980) (continuing stay of all discovery); 506 F.Supp. 750 (E.D.N.Y.1980) (reserving decision on plaintiffs' motion for class certification); 506 F.Supp. 750 (E.D.N.Y.1980) (deeming each defendant to have denied the cross-claims asserted against it by other defendants); 506 F.Supp. 753 (E.D.N.Y.1980) (denying request of plaintiffs' counsel to certify additional documents for review on appeal); 506 F.Supp. 753 (E.D.N.Y.1980) (government's motion to dismiss third party complaints deemed to be directed also against Hooker Chemical and Plastics Company); 506 F.Supp. 753 (E.D.N.Y.1980) (updating earlier order regarding defendants' answers to complaints in MDL 381);

506 F.Supp. 754 (E.D.N..1980) (refusing to strike a plaintiff's notice to take his deposition by videotape); 506 F.Supp. 756 (E.D.N.Y.1980) (scheduling a status conference); 506 F.Supp. 757 (E.D.N.Y.1980) (denial of plaintiffs' motion for relief from individual filing of notice of claim forms required by the Federal Tort Claims Act); 506 F.Supp. 762 (E.D.N.Y.1980) (dismissal of third-party complaints against the government), *modified,* 580 F.Supp. 1242 (E.D.N.Y.1984), (see *infra*); 506 F.Supp. 762 (E.D.N.Y.1980) (certification of class under Rule 23(b)(3)), *modified,* 100 F.R.D. 718 (E.D.N.Y.1983) (see *infra*); 506 F.Supp. 762 (E.D.N.Y.1980) (notice of court's intention to try government contract defense separately); 506 F.Supp. 762 (E.D.N.Y.1980) (denial of plaintiffs' motion for summary judgment on the government contract defense); 506 F.Supp. 762 (E.D.N.Y.1980) (lifting stay of discovery on government contract defense issues); *Ryan v. Cleland,* 531 F. Supp. 724 (E.D.N.Y.1982) (granting the government's motion to dismiss Vietnam veterans' complaint against the Veterans Administration); *In re "Agent Orange" Product Liability Litigation,* 534 F.Supp. 1046 (E.D.N.Y.1981) (denial of defendants' motion for entry of final judgment on earlier dismissal of the government); 534 F.Supp. 1046 (E.D.N.Y.1982) (denial of defendant Dow Chemical Company's motion to amend its previously dismissed complaint against the government); 534 F.Supp. 1046 (E.D.N.Y.1982) (dismissal of defendants Riverdale, Ansul, Hooker and Occidental); 534 F.Supp. 1046 (E.D. N.Y.1982) (denial of motion of certain plaintiffs' counsel to establish a steering committee); 534 F.Supp. 1046 (E.D.N.Y.1982) (denial of Dow Chemical Company's motion to decertify the class); 534 F.Supp. 1046 (E.D.N.Y. 1982) (continuation of order tolling statutes of limitations); 534 F.Supp. 1046 (E.D.N.Y.1982) (statement of the elements of the government contract defense); 534

F.Supp. 1046 (E.D.N.Y.1982) (statement of issues to be narrowed); 534 F.Supp. 1046 (E.D.N.Y.1982) (request for discovery timetable on the government contract defense); 537 F.Supp. 977 (E.D.N.Y.1982) (granting summary judgment motion of defendant Uniroyal Merchandising Company); 544 F.Supp. 808 (E.D.N.Y.1982) (denial of motion to disqualify law firm representing five defendants); 544 F.Supp. 808 (E.D.N.Y.1982) (dismissal of defendants Syntex Corporation, Syntex Laboratories, Inc., Syntex Agribusiness, Inc. and Hoffman-Taff, Inc. (Delaware); 544 F.Supp. 808 (E.D.N.Y.1982) (motion for voluntary dismissal of defendant Hoffman-Taff, Inc. (Missouri) denied); 544 F.Supp. 808 (E.D.N.Y.1982) (denial of motion by defendant Uniroyal, Inc. to implead seven component manufacturers); 565 F.Supp. 1263 (E.D.N.Y.1983) (motions for summary judgment granted in favor of defendants Thompson Chemical Corporation, Hercules, Inc., Riverdale Chemical Company, Hoffman-Taff, Inc. (Missouri); motions for summary judgment of Dow Chemical Company, Uniroyal, Inc. and T.H. Agriculture & Nutrition Company denied); 565 F.Supp. 1263 (E.D. N.Y.1983) (notice of court's intention to combine trial of government contract defense and liability and causation issues); 570 F.Supp. 693 (E.D.N.Y.1983) (approval of Special Master's discovery program); 571 F.Supp. 481 (E.D.N.Y.1983) (creation of a new plaintiffs' management committee); 580 F.Supp. 690 (E.D.N.Y.1984) (preliminary memorandum on conflicts of law); 580 F.Supp. 1242 (E.D.N.Y.1984) (memorandum on government liability), *mandamus denied*, 733 F.2d 10 (2d Cir.), *appeal dismissed*, 745 F.2d 161 (2d Cir.1984); 91 F.R.D. 616 (E.D. N.Y.1981) (plaintiffs' motion for videotaped depositions of *in extremis* plaintiffs); 91 F.R.D. 618 (E.D.N.Y.1981) (plaintiffs' motions for videotaped depositions); 91 F.R.D. 618 (E.D.N.Y.1981) (granting defendant Thomp-

son-Haywood Chemical Company's motion to amend caption to reflect new corporate name); 91 F.R.D. 618 (E.D.N.Y.1981) (denying plaintiffs' motions to amend complaints); 91 F.R.D. 618 (E.D.N.Y. 1981) (denying plaintiffs' motions to amend complaints); 91 F.R.D. 618 (E.D.N.Y.) (denying plaintiffs' motion for summary judgment on government contract defense); 93 F.R.D. 514 (E.D.N.Y.1982) (granting defendant Dow Chemical Company's motion to destroy certain documents); 94 F.R.D. 173 (E.D.N.Y.1982) (appointing Sol Schreiber, Esq., as Special Master); 95 F.R.D. 191 (E.D.N.Y.1982) (denial of rehearing on defendant Uniroyal, Inc.'s motion to implead component manufacturers); 95 F.R.D. 192 (E.D.N.Y. 1982) (affirming Special Master's ruling that government employees be deposed in New York); 96 F.R.D. 578 (E.D.N.Y.1983) (adopting Special Master's recommended protective order on production of EPA documents); 96 F.R.D. 582 (E.D.N.Y.1983) (denial of intervenor CBS's application for access to nonclassified and nonconfidential documents produced during discovery); 96 F.R.D. 587 (E.D.N.Y.1983) (adopting with modifications Special Master's guidelines for taking videotaped depositions of *in extremis* plaintiffs); 97 F.R.D. 424 (E.D.N.Y.1983) (adopting Speical Master's recommendations for an order protecting the confidentiality of documents produced from the government's MAC-V collection); 97 F.R.D. 424 (E.D. N.Y.1983) (adopting Special Master's recommendation for an order protecting the confidentiality of certain USDA documents); 97 F.R.D.427 (E.D.N.Y.1983) (adopting Special Master's recommended guidelines for assertion of executive privilege); 97 F.R.D. 541 (E.D.N.Y.1983) (denial of defendants' motion for order certifying interlocutory appeal of order deferring class certification and notice until after trial of the government contract defense); 97 F.R.D. 542 (E.D.N.Y.1983) (affirming Spe-

cial Master's ruling on production of certain government documents); 98 F.R.D. 522 (E.D.N.Y.1983) (order on Special Master's recommendation concerning defendants' motions to compel certain discovery from the government); 98 F.R.D. 539 (E.D.N.Y.1983) (unsealing all materials filed in connection with summary judgment motions made by seven of the defendants); 98 F.R.D. 554 (E.D.N.Y.1983) (denying defendant Monsanto's request to maintain seal on one document submitted in connection with other defendants' summary judgment motions); 98 F.R.D. 557 (E.D.N.Y.1983) (order regarding Special Master's determinaton of relevancy of documents claimed by the government to be protected from disclosure by state secrets privilege); 98 F.R.D. 558 (E.D.N.Y.1983) (approving Special Master's order for additional discovery regarding defendant Diamond Shamrock Chemicals Company's document retention policy); 99 F.R.D. 338 (E.D.N.Y. 1983) (approving two recommendations of the Special Master, (1) permitting government counsel appearing as counsel for former employees to review personal files of former employees for relevancy as well as privilege, and (2) denying defendants' request to take depositions of custodians of government documents); 99 F.R.D. 645 (E.D.N.Y.1983) (adopting Special Master's recommendation to lift protective order as it related to discovery material produced by the government); 100 F.R.D. 718 (E.D.N.Y.1983) (reconsideration and modification of class certification and notice), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984); 100 F.R.D. 735 (E.D.N.Y. 1983) (denial of defendants' request for certification for interlocutory appeal of order certifying class); 100 F.R.D. 778 (E.D.N.Y.1984) (denial of defendant Uniroyal, Inc.'s motion to implead herbicide component manufacturers);

101 F.R.D. 97 (E.D.N.Y.1984) (order regarding government's assertion of state secrets privilege).

IN RE AGENT ORANGE PRODUCT LIABILITY LITIGATION

Cite as 597 F.Supp. 740 (1984)

APPENDIX D

U.S. Department of Justice

Express Mail

JA:AMaskin:GLWitt:bf
157-0-107

April 24, 1984
Telephone:
(202) 724-6725

Honorable Judge Jack B. Weinstein
Chief Judge, U.S. District Court for
the Eastern District of New York
25 Cadman Plaza East
Brooklyn, New York 11201

Re: In re "Agent Orange" Product
Liability Litigation, MDL No. 381

Dear Judge Weinstein:

I am responding to your specific request for the United States' position in writing on the Court's appointment of Special Masters to preside over settlement discussions.

The United States declines to attend or participate in settlement negotiations or court settlement conferences because any settlement of this case that calls for contribution by the United States is not warranted. This is the United States' firm position, and we anticipate no change whatever in any aspect of it.

In view of our position, we do not object to the Court's appointment of Special Masters for settlement.

Respectfully submitted,

/s/ Arvin Maskin
ARVIN MASKIN
Trial Attorney, Torts Branch
Civil Division

APPENDIX E

STATUTES OF LIMITATIONS IN THE RELEVANT JURISDICTIONS

Below is a table outlining the relevant provisions of the statutes of limitations of the states, territories and foreign countries in which class members are resident. The numbers preceding many of the statutory and case law citations are references to footnotes at the end of the table. If a jurisdiction's rule as to the time of accrual of a particular type of tort action is not indicated, the presumption is that the jurisdiction uses the "time of injury" rule.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Alabama	Suits for compensation for latent personal injuries resulting from exposure to toxic substances are to be commenced within 1 year from date such injury is, or in the exercise of reasonable diligence, should have been discovered by the plaintiff Ala.Code § 6-5-502(b).		1 year from time the personal injury, death or property damage occurs. Ala.Code § 6-5-502(a).	1 year. Ala.Code § 6-2-39(5).		[7] Ala.Code § 6-2-17.	[12] Ala.Code § 6-2-8(c).
Alaska	[1] *Sharrow v. Archer*, 658 F.2d 1331 (Alaska 1983).	Tort action accrues when there has been an invasion of a legally protected interest of plaintiff.		2 years. Alaska Stat. § 09.10.070 (1962).		If a cause of action arising in another forum between nonresidents of Alaska would be barred in forum, it will be barred in Alaska. Alaska Stat. § 9.10.220 (1962).	[10] Alaska Stat. § 9.10.140 (1962).
Arizona	[4] Ariz.Rev.Stat.Ann. § 12-564 (1976).		2 years A[illegible] Rev.Stat.Ann. § 12.542 although statute of repose is 12 years after product was first sold for use or consumption, Ariz.Rev.Stat.Ann. § 12-551 (1978), unless cause of action is based upon negligence or breach of warranty.	2 years. Ariz.Rev. Stat.Ann. § 12-542 (1978).		No action arising outside Arizona, which is barred because of limitations, may be instituted in Arizona by a person migrating there. Ariz.Rev.Stat.Ann. § 12-506. —Arizona has adopted the "contacts theory for determining choice of law questions in tort cases. *Schwartz v. Schwartz*, 103 Ariz. 562 447 P.2d 254 (1968).	[9] Ariz.Rev.Stat.Ann. § 12-502.

APPENDIX E—Continued

State	TIME OF ACCRUAL: Discovery	TIME OF ACCRUAL: Injury	LIMITATIONS PERIOD BY TYPE OF CASE: Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Arkansas	[4] Ark.Stat.Ann. § 34-2616.	The period begins to run when the death, injury, or damage complained of occurs.	3 years. Ark.Stat. Ann. § 34-2803(1979).	3 years. Ark.Stat. Ann. § 37-206 (1947).	None	[12] Ark.Stat.Ann. § 37-226.	
California	1. *Brown v. Rheberg*, 186 Cal.Rptr. 228, 651 P.2d 815 (1982). Special "discovery" statute for asbestos. Cal.Civ.Proc. Code § 340.2 (1979). —"Discovery" rule applied in *Perrera v. Dow Chemical Co., Inc.*, 129 Cal.App.3d 866, 181 Cal.Rptr. 364 (1982) (toxic chemical).			1 year. Cal.Civ.Proc. Code § 340 (1979).		[8] Cal.Civ.Proc. Code § 361.	[9] Cal.Civ.Proc. Code § 352.
Colorado	[1] *Short v. Downs*, 36 Colo.App. 109, 537 P.2d 754 (1975).			3 years. Colo.Rev. Stats. § 13-80-127.5 (effective to causes of action accruing on or after July 1, 1977).		[7] Colo.Rev.Stats. § 13-80-118 (1973).	[9] Colo.Rev.Stats. § 13-80-116.
Connecticut	2 years from date injury was or through exercise of reasonable diligence, should have been discovered. Conn. Pub. Act No. 83-15				2 years. 1983 Conn. Pub. Act No. 83-15 (eff. April 17, 1983).	None.	None.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Delaware					2 years from date plaintiff is told by licensed physician that his injuries may be related to exposure. Del.Code Ann. Tit. 10, § 8131(a) (1983).	When confronted with a substantive choice of law situation in a tort action, Delaware will apply the law of the state where the injury occurred. The injury occurs not where the wrong takes place, but rather where the wrong caused the injury. *Hill v. Equitable Trust Co.*, 562 F.Supp. 1324 (1983). [8] Del.Code Ann. Tit. 10, § 8121 (1953).	Infancy does not toll statute of limitations in personal injury actions. Del.Code Ann. 10-3.16.
District of Columbia	[1] *Burns v. Bell*, 409 A.2d 614 (D.C.1979) (medical malpractice); *see also Fort Myers Seafood Packers, Inc. v. Steptoe & Johnson*, 127 U.S.App.D.C. 93, 381 F.2d 261 (D.C.Cir. 1967) (legal malpractice; time runs from discovery of negligence or when actual damage results).			3 years. D.C.Code Encycl. 512-301 (1966).		None.	[9] D.C.Code § 12-202.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Florida	[6] Fla.Stat.Ann. § 95-031.		12 year repose period after the date of delivery of the completed product to its original purchaser. Fla.Stat.Ann. § 95-031(2) —This statute of repose was declared unconstitutional by the Florida Supreme Court in *Battilla v. Allis Chalmers Manuf. Co.*, 392 So.2d 874 (Fla.1980).	4 years for actions founded upon negligence. Fla.Stat.Ann. § 95-11(3)(j).		[7] Fla.Stat.Ann. § 95-10.	None for personal injury suits.
Georgia	Georgia has utilized the "continuous tort" concept in lieu of the "discovery" rule except for foreign object cases. *Everhart v. Rick's, Inc.*, 229 Ga. 798, 194 S.E.2d 426 (1972) (fiberglas curtains; continuing duty to warn of potential harm); *Piedmont Pharmacy, Inc. v. Palmore*, 144 Ga. App. 160, 240 S.E.2d 888 (1977) (eye drops used over a three year span).		No strict products liability action may be commenced with respect to an injury after 10 years from date of the first sale for use or consumption of the personal property causing the injury. Official Code of Georgia Ann., § 51-1-11 (1978).	2 years. Official Code of Georgia Ann., § 9-3-33.		None. Georgia's statute of limitations is normally applied to cases arising in other jurisdiction. *Cleveland Lumber Co. v. Proctor & Schwartz, Inc.*, 397 F.Supp. 1088 (N.D.Ga.1975).	[8] Georgia Ann. § 9-3-90.
Hawaii	In *Basque v. Yuk Lin Liau*, 50 Haw. 397, 441 P.2d 636 (1968), the "discovery" rule was applied where damage			2 years. Haw.Rev. Stats. § 657-7 (1972).			[9] Haw.Rev.Stats. § 657-13.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Idaho			2 years. Idaho Code § 6-1303(3) (1980). But where the product is more than 10 years old a rebuttable presumption arises that the harm occurred after the useful shelf life has expired. Idaho Code § 6-1303(2)(a) (1980).	2 years. Idaho Code § 5-219 (1971).		[8] Idaho Code § 5-239.	[9] Provided however, that 6 years is the maximum tolling period for disabilities. Idaho Code § 5-230.
Illinois	[6] Ill Rev Stats. Ch 110 § 13-213(d) (1983).		2 years. Ill Rev. Stats. Ch 110 § 13-213(d) (1983). The statute of repose for strict products liability actions is 12 years from date of first sale, lease, or delivery of possession by seller or 10 years from date of first sale, lease, or delivery of possession to its initial user, consumer, or other non seller, whichever period is earlier.			[7] Ill Rev Stats. Ch. 110, § 13-210 (1983).	[10] Ill Rev Stats. Ch 110, § 13-112, 211.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Indiana		A cause of action accrues at the time one has suffered (1) a legal injury and (2) resulting damage capable of ascertainment. *Gahimer v. Virginia-Carolina Chemical Corp.*, 241 F.2d 836 (7th Cir. 1957).	2 years "after accrual or within 10 years after the delivery of the product to the initial user or consumer, except that if cause of action accrues more than eight (8) years but not more than 10 years after the initial delivery, the action may be commenced at any time within 2 years after the cause of action accrues." Ind.Code § 34-4-20A-5.			Where an action against a non-resident, which arose outside the state, is barred by the laws of both the place where the action arose and the state where the defendant resides, the action cannot be maintained in Indiana. Ind.Stat. Ann. § 34-1-2-6(b) (1959). When the borrowing statute does not apply, Indiana applies the *lex fori* rule. *Horvath v. Davidson*, 148 Ind. App. 203, 264 N.E. 2d 328 (1970).	Ind.Code § 34-1-2-5; *Lehman v. Scott*, 113 Ind. 76, 14 N.E. 914 (1888).
Iowa	[b] *Franzen v. Deere & Co.*, 334 N.W.2d 730 (1983); *Brown v. Ellison*, 304 N.W.2d 197 (1981); *Christchiller v. Griswold*, 150 N.W.2d 94 (1967).			2 years. Ia. Code Ann. § 614-1.		If a cause of action which arose outside the state is barred by the laws of any state or country while a defendant resided there, the action may not be maintained in Iowa. Ia. Code Ann. § 614-7. Iowa has adopted the "most significant relationship" rule whereby the local law of the state having the most significant relationship with the occurrence and the parties will be applied. *Fuerste v. Bemis*, 156 N.W.2d 831 (1968).	[b] Ia. Code Ann. § 614-5.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Kansas	A cause of action does not accrue until the act giving rise to the cause of action first causes substantial injury, or if the fact of injury is not reasonably ascertainable, when it becomes reasonably ascertainable.		The statute of repose is 10 years after the time of the act giving rise to the cause of action. Kan.Stat.Ann. § 60-513(b).	2 years. Kan.Stat. Ann. § 60-513 (1976).		[8] Kan.Stat.Ann. § 60-516 (1976).	[11] No action can be maintained after 8 years from time of act giving rise to cause of action. Kan.Stat.Ann. § 60-515.
Kentucky	[3] Ky.Rev.Stat.Ann. § 413.245 (1980). [4] *Louisville Trust Co. v. Johns-Manville Products Corp.*, 580 S.W.2d 497 (1979) (asbestos exposure).			1 year. Ky.Rev.Stat. Ann. § 413.140 (1942).		[7] Ky.Rev.Stat.Ann. § 413.320.	[9] Ky.Rev.Stat.Ann. § 413.170.
Louisiana	[1] *Henson v. St. Paul Fire and Marine Insurance Co.*, 363 So.2d 711 (1978). [5] *Yarborough v. Louisiana Cement Co., Inc.*, 370 So.2d 602 (1979), (exposure to toxic chemicals).	The period of limitations commences when the damage is sustained. La.Civ. Code Ann., Art. 3537.		1 year. La.Civ.Code Ann., Art. 3492.		None.	
Maine	[2] *Myrick v. James*, 444 A.2d 987 (Me. 1982).	Generally, a cause of action in tort accrues at the time when plaintiff sustains a judicially cognizable injury. *Bozzuto v. Ouellette*, 408 A.2d 697, 699 (Me.1979).		6 years for all civil actions except as otherwise provided. Me.Rev.Stat.Ann. Tit. 14, § 752 (1954).		No action may be brought by any person whose cause of action has been barred by the laws of any foreign state, territory, or country where all parties have resided. Me. Rev.Stat.Ann. Tit. 14, § 866 (1954).	[9] Me.Rev.Stat.Ann. Tit. 14, § 807.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Maryland	In *Poffenberger v. Risser*, 290 Md. 631, 431 A.2d 677 (1981), the Maryland Court of Appeals held that in all civil actions the "discovery" rule is generally applicable in determining when a cause of action accrues.			3 years for civil actions unless otherwise provided. Md. Limitations Code Ann. § 5-101 (1957).		None. Statutes of limitations are generally considered procedural, unless they bar the right and not merely the remedy, in which case the statute is considered substantive. *President and Directors of Georgetown College v. Madden*, 505 F.Supp. 557, 571 (1980).	[12] Except where statute of limitations has more than 3 years to run at time of removal. Md.Code Ann. § 5-201.
Massachusetts		Cause of action in products liability action accrues at time of injury. *Cannon v. Sears, Roebuck & Co.*, 374 Mass. 739, 374 N.E.2d 582 (1978).		3 years. Mass.Gen. Laws Ann. Ch. 260 § 2A (1948).		No cause of action may be brought by any person which was barred in a foreign jurisdiction while such person resided therein. Mass.Gen.Laws, Ch. 260 § 9 (1958).	[9] Mass.Ann.Laws § 260.7.
Michigan		In *Parish v. B. F. Goodrich*, 295 Mich. 271, 235 N.W.2d 570 (1975), the Michigan Supreme Court held that a product liability claim by a consumer against a manufacturer accrues when and where injury and damage are suffered.	3 years. Mich.Comp. Laws § 27A-5805.	3 years. after time of death or injury. Mich.Comp.Laws § 27A-5805.		[8] Mich.Comp.Laws § 27A-5861 (1978).	[11] Mich.Comp.Laws § 27A-5851.
Minnesota		Limitation period runs from time of injury. *Jewson v. Mayo Clinic*, 691 F.2d 405 (8th Cir. 1982).	4 years. Minn.Stat. Ann. § 541.05(2).	2 years. Minn.Stat. Ann. § 541.07(2).	None.	None.	Minn.Stat.Ann. § 541.15(1).

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Mississippi	[3] Miss.Code Ann. § 15-1-36.	Cause of action accrues at time of injury. *Wilson v. Retail Credit Co.*, 325 F.Supp. 460 (S.D. Miss. 1971), *aff'd*, 457 F.2d 1406 (5th Cir. 1972).	Cause of action accrues when damage occurs, *Alabama Great Southern R. Co. v. Allied Chemical Corp.*, 467 F.2d 679 (5th Cir. 1972), unless plaintiff knew or should have known of the defect earlier, *Maly v. Magnavox*, 460 F.Supp. 47 (N.D. Miss.1978).	6 years. Miss.Code Ann. § 15-1-49.		[7] Miss.Code Ann. § 15-1-65.	[9] Miss.Code Ann. § 15-1-59.
Missouri	[4] Mo.Rev.Stats. § 516-1056 (1976).	"[T]he cause of action shall not be deemed to accrue when the wrong is done. . . but when the damage resulting therefrom is sustained and is capable of ascertainment. . ." Mo.Rev. Stats. § 516.100.		5 years. Mo.Rev. Stats. § 516.120 (1939).		[7] Mo.Rev.Stats. § 516.190 (1939).	[9] Mo.Rev.Stats. § 516.030.
Montana	[2] *Johnson v. St. Patrick's Hospital*, 148 Mont. 125, 417 P.2d 469 (1966).		A district court extended the date of discovery rule used in medical malpractice—foreign object cases to a products liability case involving MER/29. *Hornung v. Richardson-Merrill, Inc.*, 317 F.Supp. 183 (D.Mont.1970).	3 years. Mont.Code Ann. § 27-2-204.		An action cannot be started in Montana against a nonresident after the statute of limitations has expired in the non-resident's state, unless the action originally accrues in favor of a Montana resident or plaintiff became a resident of Montana before Statute of Limitations of non-resident's state expired. Mont.Code Ann. § 27-2-104.	[11] Mont.Code Ann. § 27-2-401.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Nebraska	[1] *Taylor v. Karrer*, 198 Neb. 581, 244 N.W.2d 201 (1976).		4 years after date on which death, injury, or damage occurs. Neb.Rev.Stat. 25-224(1). The Statute of Repose is 10 years after the date when the product was first sold or leased for use or consumption. Neb. Rev.Stat. 25-224(2).	Notwithstanding the provisions of subsections (1) and (2) of Neb.Rev.Stat. 25-224, any cause of action which a person may have on July 22, 1978 may be brought not later than 2 years following such date. Id. (4).		All causes of action which are barred by laws of any other state, territory, or country are barred in Nebraska, but no action shall be barred by the laws of any other state, territory, or country unless the same would have been barred by the provisions of this chapter had the defendant been a resident of this state for the period herein described. Neb.Rev. Stat. 25-215.	[9] Neb.Rev.Stat. 25-213.
Nevada	[3] Nev.Rev.Stats. § 41A-097(1).			2 years. Nev.Rev. Stats. § 11-190 (1979).		[8] Nev.Rev.Stats. § 11-020.	[9] Nev.Rev.Stats. § 11-250.
New Hampshire	[6] N.H.Rev.Stats.Ann. § 507-D:2.		3 years: N.H.Rev. Stats.Ann. § 507-D:2(I). There is a 12 year period of repose after manufacturer sold or parted with possession Id. (II)(A). The statute of repose has been declared unconstitutional by the New Hampshire Supreme Court in *Heath v. Sears, Roebuck & Co.*, 123 N.H. 512, 464 A.2d 288 (1983).			None.	[10] N.H.Rev.Stats. Ann. § 508-8.
New Jersey				2 years. N.J.Stat. Ann. Tit. 2A:14-2.		None.	[9] N.J.Stat.Ann. Tit. 2A:14-2.

APPENDIX E—Continued

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
New Mexico	[1] *Peralta v. Martinez*, 90 N.M. 391, 564 P.2d 194, cert. denied 90 N.M. 636, 567 P.2d 485 (1977).	Limitation period runs from time of injury. *New Mexico Electric Service Co. v. Montanez*, 80 N.M. 278, 55 P.2d 634 (1976).		3 years. N.M.Stat. Ann. § 37-1-8.		None. Under case law, the statute of limitations is considered procedural and the law of the forum state applies regardless of where the action arose. *Sierra Life Insurance Co. v. First National Life Insurance Co.*, 85 N.M. 409, 512 P.2d 1245 (1973).	[11] N.M.Stat.Ann. § 37-1-10.
New York		Limitation period runs from date of injury.		3 years. CPLR § 214.	2 years from date of discovery of injury or from the date when through exercise of reasonable diligence it should have been discovered. CPLR § 214-b. [See discussion in text.]	A cause of action arising outside of New York cannot be commenced in New York after the expiration of either the period of limitations in New York or the place where the cause of action accrued, except that in a case of a New York resident, the New York Limitations period will apply. CPLR § 202.	If cause of action accrues to an infant, and if period of limitations is less than 3 years, it is extended by period of disability. CPLR § 208. If the time otherwise limited is three years or more and expires no more than 3 years after the disability ceases, the time within which the action must be commenced shall be extended to three years after disability. CPLR § 208.
North Carolina	[6] N.C.Gen.Stat. § 1-52(16).		3 years. N.C.Gen. Stat. § 1-52(5). The Statute of Repose is 10 years from the last act or omission of the defendant giving rise to the cause of action. N.C.Gen.Stat. § 1-52(16).				[9] N.C.Gen.Stat. § 1-17.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
North Dakota		In a product liability action the cause of action accrues at time of injury. *Keller v. Clark Equipment Co.*, 474 F.Supp. 966, 969 (D.N.D.1979).	For injuries occurring after 7/1/81, an action based on breach of implied warranties, design or manufacturing defect, failure to warn or failure to instruct in use of product, there will be no recovery unless injury occurred within 10 years of purchase or 11 years of date of manufacture. However, this does not apply where the manufacturer becomes aware of a defect and fails to warn user who is subsequently injured as a result of the defect. N.D.Cent. Code § 28.01.1-02 (1979).	6 years. N.D.Cent. Code § 28.01-16 (1977).		None.	[9] N.D.Cent.Code § 28.01.25.
Ohio					2 years from date plaintiff is advised by a competent medical authority that he has been injured by exposure to chemical defoliants or herbicides or other causative agents including agent orange. Ohio Rev. Code Ann. § 2305-10.	None.	[9] Ohio Rev.Code Ann. § 2305-16.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Oklahoma	[2] *Seitz v. Jones*, 370 P.2d 300 (Okla.1961); *Lewis v. Owen*, 397 F.2d 537 (10th Cir. 1968).		In a products liability case, it was held that the limitations period for personal injuries from an occupational disease allegedly produced by the cumulative effect of a dangerous product does not accrue until plaintiff knows, or a reasonably prudent person should know that he has a condition for which his action is brought and that defendant caused it. *Williams v. Borden, Inc.*, 637 F.2d 731 (10th Cir. 1980).	2 years "for injury to rights of another" Okla.Stat.Ann. Tit. 12 § 95(3) (1970).		Oklahoma has enacted The Uniform Statute of Limitations on Foreign Claims Act which provides, *inter alia*, that the "period of limitations applicable to a claim accruing outside of the law of this state shall be prescribed by either the law of the place where the claim accrued or by the law of this state, whichever last bars the claim". Okla.Stat. Ann. Tit. 12 § 105.	[11] Okla.Stat.Ann. Tit. 12 § 94–6.
Oregon	The "discovery" rule applies in asbestos cases. Ore.Rev.Stat. § 30–905(3).		2 years after date of death, injury, or damage. Ore.Rev. Stat. § 30–905(2). The Statute of Repose is 8 years after the date on which the product was first purchased for use or consumption. Ore.Rev.Stat. § 30–905(1).			[7] Ore.Rev.Stat. § 12.260.	[9] Ore.Rev.Stat. § 12.160.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Pennsylvania	[1] *Ayers v. Morgan*, 397 Pa. 282, 154 A.2d 788 (1959) (medical malpractice-foreign object), *Daniels v Beryllium Corp.*, 227 F.Supp. 591 (E.D.Pa.1964) (industrial pollution exposure); *Ciabattori v. Birdsboro Steel Foundary & Machine Co.*, 386 Pa. 179, 125 A.2d 365 (1956) (silicosis).			2 years. Pa.Const. Stat.Ann. § 5524(2) (1978).		Pennsylvania has adopted The Uniform Statute of Limitations on Foreign Claims Act, Pa.Const.Stat.Ann. § 5521 (1978). If a claim accrues outside Pennsylvania, the shorter of the statute of limitations of that jurisdiction or Pennsylvania controls.	Time to commence proceedings is not extended by infancy. Pa.Const.Stat.Ann. § 5533.
Puerto Rico			1 year. P.R.Laws Ann. Tit. 31 § 5298			[6] P.R. Laws Ann.	
Rhode Island					3 years from date injury was or through exercise of reasonable diligence should have been discovered. R.I.Gen. Laws § 9-1-14.2 (1982).	[7] R.I.Gen.Laws § 9-1-18.	[9] R.I.Gen.Laws § 9-1-19.
South Carolina	The "discovery rule" applies. S.C.Code § 15-3-535.		6 years. S.C.Code § 15-3-30			None.	[9] S.C.Code § 15-3-40.
South Dakota			3 years. S.D.Comp. Laws Ann. § 15-2-14. The period of repose is 6 years from delivery of product to first purchaser or lessee who was not engaged in business of selling product. S.D.Comp. Laws Ann. § 15-2-12-1.				

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Tennessee	[1] *Teeters v. Currey*, 518 S.W.2d 512 (1974).	"Insofar as products liability cases are concerned, the cause of action for injury to the person shall accrue on the date of the personal injury. . . No person shall be deprived of his right to maintain a cause of action until 1 year from the date of his injury, and under no circumstances shall his cause of action be barred before he sustains an injury." Tenn.Code Ann. § 28-3-104(b).	6 years. The period of repose is 10 years from date of injury or 1 year after the anticipated life of the product, whichever is shorter, except in case of minors who must sue within one year after attaining majority. The foregoing limitation of actions does not apply to any action resulting from exposure to asbestos.	1 year. Tenn.Code Ann. § 28-3-104(a).		"Where a foreign jurisdiction's statute of limitations bars an action accruing therein, while the party to be charged was a resident in such state, the bar is equally effectual in this state". Tenn.Code Ann. § 28-1-112.	[12] Tenn.Code Ann. § 28-1-106.
Texas	The "discovery" rule was applied in *Strickland v. Johns-Manville Intern. Corp.*, 461 F.Supp. 215 (S.D.Tex.1978).			2 years. Tex.Rev.Civ. Stat.Ann. Tit. 16A. Art. 5526 (1979).		None. Texas courts apply the "most significant relationship" test in all conflicts cases sounding in tort. *Gutierrez v. Collins*, 583 S.W.2d 312 (Tex.1979).	[9] Tex.Rev.Civ.Stat. Ann. Tit. 91 Art. 5535.
Utah	[3] Utah Code Ann. § 78-14-4.		6 years after the date of initial purchase for use or consumption, or 10 years after the date of manufacture of a product. Utah Code Ann. § 78-15-3 (1977).			[8] Utah Code Ann. § 78-12-45.	Tolling provisions do not apply to product liability actions. Utah Code Ann. § 78-15-3.

State	TIME OF ACCRUAL: Discovery	TIME OF ACCRUAL: Injury	LIMITATIONS PERIOD BY TYPE OF CASE: Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Vermont	The "discovery" rule applies in personal injury actions. Vt.Stat.Ann., Tit. 12 § 512(4) (Effective July 1, 1976).(16).			3 years. Vt.Stat. Ann., Tit. 12 § 512(4) (1976).		None.	[9] Vt.Stat.Ann., Tit. 12 § 551.
Virginia	"Injury within purview of statute of limitations on action for personal injuries means positive, physical or mental hurt to claimant, not legal wrong in broad sense that his legally protected interest has been invaded". *Locke v. Johns-Manville Corp.*, 221 Va. 951, 275 S.E.2d 900 (1981) (asbestosis).	The cause of action accrues from the date the injury is sustained. Va.Code Ann. § 8.01-230.		2 years. Va.Code Ann. § 8.01-243(A).		None.	[9] Va.Code Ann. § 8.01-229.
Washington	[6] Wash.Rev.Code Ann. § 7.72-060(3).		3 years. Wash.Rev. Code Ann. § 7.72-060(3). However if the harm occurs more than 12 years after the time of delivery, a rebuttable presumption arises that the harm was caused after the useful safe life of the product had expired. *Id.* at Subsection (2).			If an action arising outside of Washington between non-residents is time-barred in that jurisdiction, it cannot be maintained in Washington. Wash.Rev.Code Ann. § 4.16-290 (1962).	[9] Wash.Rev.Code Ann. § 4.16-190.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
West Virginia					2 years after injury was discovered, or, through the exercise of reasonable diligence, should have been discovered, whichever is later. W.Va.Code § 16-28-10 (1982). If such an action is otherwise barred as of the effective date of the law, June 9, 1983, the cause of act is revived and may be filed within 2 years.	If the cause of action accrued outside the state, the shorter of that statute or West Virginia's limitation period will apply. W.Va.Code § 55-2A-2 (1959).	[9] Except that in no case may the action be brought more than 20 years after the time when the cause of action first accrues. W.Va.Code § 55, Art. 2 § 15.
Wisconsin	[5] *Hansen v. A. H. Robins, Inc.*, 113 Wis.2d 550, 335 N.W.2d 578 (1983) ("Dalkon Shield") and *Neubauer v. Owens-Corning Fiberglass Corp.*, 686 F.2d 570 (7th Cir. 1982) (asbestosis).			3 years. Wis.Stat. Ann. § 893-54.		In a non-Wisconsin forum the time for commencement of an action is determined by local law of the forum. If the non-Wisconsin action is based on a Wisconsin cause of action the Wisconsin statute of limitation is tolled from the time of commencement of the action in the non-Wisconsin forum. This tolling provision does not apply to an action commenced on a Wisconsin cause of action in a non-Wisconsin forum if the action is barred by the law of the forum. Wis.Stat.Ann. § 893-15 (Eff. July 1, 1980).	[9] Wis.Stat.Ann. § 893-16.

APPENDIX E—Continued

State	TIME OF ACCRUAL: Discovery	TIME OF ACCRUAL: Injury	LIMITATIONS PERIOD BY TYPE OF CASE: Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Wyoming				4 years. Wyo.Stat. Ann. § 1-3-105(c).		[7] Wyo.Stat.Ann. § 1-3-117.	[12] Wyo.Stat.Ann. § 1-3-114.
AUSTRALIA Australian Capital Territory				6 years. S. 3.			[9] S. 7.
New South Wales	Extension of 1 year after material facts of cause of action become known to plaintiff. S. 58(2)(a) & (b).			6 years. S. 14 (1)(b).			[9] S. 52(1)(d).
Northern Territory				6 years. S. 36.			[9] S. 47.
Queensland				3 years. S. 11.			[12] S. 29(2)(c).
South Australia	Extension of 1 year after material facts of cause of action become known to plaintiff. S. 48(3)(b)(i) & (ii).			3 years. S. 36(1).			[9] S. 45(1); S. 45(3).
Tasmania				3 years. S. 5(1), although judge may extend period by not more than 6 years. S. 5(3).			May bring action within 6 years of accrual or within limitations period after disability ceases, whichever is shorter.

State	TIME OF ACCRUAL		LIMITATIONS PERIOD BY TYPE OF CASE				
	Discovery	Injury	Product Liability	Personal Injury	Agent Orange	Borrowing Statute	Infancy
Victoria	Action may be extended for one year after material facts become known to plaintiff. S. 23A(2)(6).			3 years. S. 5(6).			[10] S. 23A(2)(a)(i) & (ii).
Western Australia				6 years. S. 38(c)(vi)			[9] S. 16 but not more than 30 years. S. 18.
NEW ZEALAND				2 years. S. 2(7)			

[1] Judicially created discovery rule in medical malpractice cases.

[2] Judicially created discovery rule in medical malpractice "foreign object" cases.

[3] Statutorily created discovery rule in professional malpractice cases.

[4] Statutorily created discovery rule in medical malpractice cases.

[5] Judicially created discovery rule for tort actions.

[6] Legislatively created discovery rule for tort actions.

[7] If the action is time-barred in the state where it arose, it is barred in the forum state.

[8] If the action is time-barred in the state where it arose, it is barred in the forum state unless the plaintiff is a citizen of the forum state.

[9] The statute of limitations is tolled during the plaintiff's minority.

[10] The statute of limitations is tolled during the plaintiff's minority except that if the limitations period would have otherwise expired before the end of minority, the suit must be brought no later than two years after the end of minority.

[11] Same as #10, except that the period for filing suit is one year instead of two.

[12] The statute of limitations is tolled during the plaintiff's minority except that all suits must be brought within three years after plaintiff attains majority.

In re "AGENT ORANGE" PRODUCT LIABILITY LITIGATION.

MDL No. 381.

United States District Court,
E.D. New York.

Dec. 16, 1983.

David J. Dean, Dean, Falanga, Sinrod & Rose, Carle Place, N.Y., Stephen J. Schlegel, Schlegel & Trafelet, Ltd., Chicago, Ill., Thomas W. Henderson, Pittsburgh, Pa., Benton Musslewhite, Houston, Tex., for plaintiffs.

Leonard Rivkin, Rivkin, Leff, Sherman & Radler, Garden City, N.Y., Philip Pakula, Townley & Updike, Wendell B. Alcorn, Jr., Cadwalader Wickersham & Taft, William Krohley, Kelley, Drye & Warren, Thomas Beck, Arthur, Dry & Kalish, New York City, David R. Gross, Budd, Larner, Kent, Gross, Picillo & Rosenbaum, Newark, N.J., Paul V. Esposito, Lewis, Overbeck & Furman, Chicago, Ill., Morton B. Silverman, Clark, Gagliardi & Miller, White Plains, N.Y., for defendants.

MEMORANDUM AND PRETRIAL ORDER

WEINSTEIN, Chief Judge:

Plaintiffs, Vietnam War veterans and members of their families, claim to have suffered damages as a result of the veterans' exposure to herbicides in Vietnam. Defendants allegedly produced these herbicides.

Some years ago this court ruled that the litigation would proceed as a class action pursuant to Rule 23(b)(3) of the Federal Rules of Civil Procedure. *In re Agent Orange Product Liability Litigation,* 506 F.Supp. 762, 787 ff. (E.D.N.Y.1980). No certification order was, however, entered. The court noted that later stages of this litigation,

especially those concerned with individual causation and damages, "may require reconsideration" of the certification. *Id.* at 790. Those later stages have now been reached.

The questions to be decided are whether the class should be certified, which of the types of classes described by Rule 23 should be utilized, how the class should be described, and for what issues. For the reasons indicated below, the class is certified for all issues under 23(b)(3), and on the issue of punitive damages under 23(b)(1)(B). This certification requires a number of decisions on the mechanics of notice described in the following discussion.

INTRODUCTION

Plaintiffs have increasingly sought to use class actions to redress injuries caused by a single product manufactured for widespread use. A number of courts have seen the class action as the only alternative "to trying... virtually identical lawsuits, one-by-one," resulting in the "bankruptcy of both the state and federal court systems." Williams, Mass Tort Class Actions, 98 F.R.D. 323, 324 (1983). Three factors in the instant litigation make the desirability of class certification even greater than it would be in most mass tort litigation.

The first is size. The potential size of plaintiff's class in this litigation numbers in the tens of thousands. If the claims are dealt with individually, the result might "result in a tedium of repetition lasting well into the next century." *In re No. Dist. of Cal. "Dalkon Shield" IUD Product Liability Litigation,* 526 F.Supp.887 (N.D.Cal.), *rev'd,* 693 F.2d 847 (9th Cir.1982), *cert. denied sub nom. A.H. Robins v. Abed,* ____ U.S. ____, 103 S.Ct. 817, 74 L.Ed.2d 1015 (1983). By way of contrast, there were only several hundred plaintiffs in the class certified by the district court in *In re Federal Skywalk Cases,* 93 F.R.D.

415 (W.D.Mo.), *vacated,* 680 F.2d 1175 (8th Cir.1982), *cert. denied sub nom. Johnson v. Stover,* 459 U.S. 988, 103 S.Ct. 342, 74 L.Ed.2d 383 (1983) and less than 4,000 in the *"Dalkon Shield"* litigation.

Second is the need to assure that the financial burden will ultimately fall on the party which, it may be found, should as a matter of fairness bear it. As this court pointed out:

> Overarching the entire dispute is a feeling on both sides that whatever existing law and procedures may technically require, fairness, justice and equity in this unprecedented controversy demand that the government assume responsibility for the harm caused our soldiers and their families by its use of Agent Orange in Southeast Asia.

In re Agent Orange Product Liability Litigation, 506 F.Supp. 762, 784 (E.D.N.Y.1980). A class action is the best vehicle for achieving that end. A single class-wide determination on the issue of causation will focus the attention of Congress, the Executive branch and the Veterans Administration on their responsibility, if any, in this case. By contrast, possibly conflicting determinations made over many years by different juries make it less likely that appropriate authorities and the parties will arrive at a fair allocation of the financial burden, if any.

Third, certification may encourage settlement of the litigation. In a situation where there are potentially tens of thousands of plaintiffs, the defendants may naturally be reluctant to settle with individual claimants on a piecemeal basis.

LAW

Rule 23(a) contains four prerequisites to the maintenance of a class action. They are

> (1) the class is so numerous that joinder of all members is impracticable, (2) there are questions of law or fact common to the class, (3) the claims... of the representative parties are typical of the claims of the class, and (4) the representative parties will fairly and adequately protect the interests of the class.

The four prerequisites as they applied to this litigation have already been carefully analyzed by the court and found to exist. *See In re "Agent Orange" Product Liability Litigation,* 506 F.Supp. 762, 787 (E.D.N.Y.1980). Present as well as prior counsel for plaintiffs appear adequate to their complex task. The only matter on which further elaboration is needed is the second prerequisite, the requirement that there be "questions of law or fact common to the class." Discussion of this point will be combined with a discussion of Rule 23(b)(3).

Rule 23(b)(3)

Rule 23(b)(3) states that if the four prerequisites of 23(a) are met, the class will be certified if, in addition, the court finds that the questions of law or fact common to the members of the class predominate over any questions affecting only individual members, and that a class action is superior to other available methods for the fair and efficient adjudication of the controversy. Thus, the issues to be decided are (1) do questions of law or fact common to the class predominate over any questions affecting only individual members, and (2) is a class action the best method for resolution of the litigation.

This court's prior finding that the government contract defense and the affirmative defense of misuse are common to the class is not contested by the parties. Defendants strongly contend, however, that the heart of any product liability claim, causation, can never be common to the class since each veteran, spouse and offspring who has in-

stituted a lawsuit claiming direct or derivative injuries from the veteran's exposure to Agent Orange brings to this case a unique history upon which his or her claim for damages is predicated. Each veteran was exposed, if at all, at different times, at different places and under different circumstances. Therefore, the argument continues, a determination on the issue of causation, whether made as a finding of general causation or as a result of a finding in "test" cases, can never be dispositive of the claims of the other class members and as a result common questions do not "predominate."

Defendants support their argument by citing the Advisory Committee's Notes on Rule 23 and a number of recent cases that have denied (b)(3) certification in mass tort cases. *See, e.g., In re No. Dist. of Cal. "Dalkon Shield" IUD Product Liability Litigation,* 693 F.2d 847 (9th Cir.1982), *cert. denied sub nom. A.H. Robins v. Abed,* ____ U.S.____, 103 S.Ct. 817, 74 L.Ed.2d 1015 (1983); *Payton v. Abbott Labs,* 100 F.R.D. 336 (D.Mass.1983) (DES Claims); *Boring v. Medusa Portland Cement Co.,* 63 F.R.D. 78 (M.D.Pa.1974) (county residents seeking damages for air pollution); *Yandle v. PPG Industries, Inc.* 65 F.R.D. 566 (E.D.Tex. 1974) (employees of asbestos plant).

Without setting forth the details and analysis of each case, it is fair to say that the reasoning of all of the cases they rely upon is the same as that of the Advisory Committee and is supportive of defendants' reasoning. The drafter's notes state:

> A 'mass accident' resulting in injuries to numerous persons is ordinarily not appropriate for a class certification because of the likelihood that significant questions not only of damages but of liability and

> defenses to liability, would be present, affecting the individuals in different ways. In these circumstances an action nominally conducted as a class action would degenerate in practice into multiple lawsuits separately tried.

Advisory Committee Notes to Proposed Rules of Civil Procedure, 39 F.R.D. 69, 103 (1966). The defendants insist that the Agent Orange situation is even worse in that the focus of the litigation is not a "mass accident," but a mass products liability based upon a series of discrete events.

Following defendants' analysis, the District Court in Texas, in denying certification of a (b)(3) class consisting of all former employees and survivors of former employees of the defendant's asbestos plant, stated that the litigation

> is very different from the single mass accident cases that have in the past allowed a class action to proceed on the liability issues. Those cases have normally involved a single tragic happening which caused physical harm or property damage to a group of people, and affirmative defenses are absent. Usually, one set of operative facts will establish liability... The Court is in agreement with the defendant that there is not a single act of negligence or proximate cause which would apply to each potential class member and each defendant in this case.

Yandle v. PPG Industries, Inc., 65 F.R.D. 566, 571 (E.D.Tex.1974). Similarly, the District Court of New Hampshire denied (b)(3) certification to a class consisting of all New Hampshire women claiming injury from DES. Plaintiffs sought a blanket determination that DES causes

injury *in utero.* The court stated that "such a determination [would] do nothing to advance the cause of class members as a group." *Mertens v. Abbott Laboratories,* 99 F.R.D. 38 at 41 (D.N.H.1983). If the class is certified, defendants suggest that the certification and class trial should be limited to the only issue which they see as common to the entire class, that is, the government contract defense.

[1] The force of the defense contention is substantial since commonality is critical to certification. Nevertheless, it is not conclusive. In deciding whether common questions predominate, a pragmatic evaluation of the interest of the class members is given great weight. As Professors Wright and Miller put it:

> "In general, a Rule 23(b)(3) action is appropriate whenever the actual interests of the parties can be served best by a single action... [T]he proper standard under Rule 23(b)(3) is a pragmatic one, which is in keeping with the basic objectives of the Rule 23(b)(3) class action. Thus , when common questions represent a significant aspect of the case and they can be resolved for all members of the class in a single adjudication, there is a clear justification for handling the dispute on a representative rather than on an individual basis."

7A C. Wright & A. Miller, Federal Practice and Procedure §§ 1777, 1778 (1972). *See also id.* at § 1783; Wright & Colussi, The Successful Use of the Class Action Device in the Management of the *Skywalk* Mass Tort Litigation, – Univ. of Missouri-Kansas City L.Rev. – (1984) (forthcoming) (noting the successful use of a 23(b)(3) class in the *Skywalk* litigation); Note, Federal Mass Tort Action: A Step Toward Equity and Efficiency, 47 Albany L.

Rev. 1180 (1983). Litigation economies are also relevant. One commentator has gone so far as to sugest that "the chief purpose of the predomination inquiry is not to measure the compatibility of class action procedures with substantive law but to determine whether a class action will in fact realize any litigation economies." Note, Developments in the Law – Class Actions, 89 Harv.L. Rev. 1318, 1505 (1976).

[2] Unlike litigations such as those involving DES, Dalkon Shield and asbestos, the trial is likely to emphasize critical common defenses applicable to the plaintiffs' class as a whole. They will include such matters as that the substances manufactured could not have caused the injuries claimed; that if any injuries were caused by defendants' product it was because of the particular use and misuse made by the government; and that the government, not the manufacturers were wholly responsible because the former knew of all possible dangers and assumed full responsibility for any damage. No "defenses to liability [are] present affecting the individuals in different ways." *Advisory Committee Notes,* 39 F.R.D at 103. It is anticipated that a very substantial portion of a prospective four-month trial will be devoted to just those defenses. Certification would be justified if only to prevent relitigating those defenses over and over again in individual cases.

Defendants' proposal to limit the class trial to the issue of the government contract defense is not a workable one. As this court has already noted, the issue of the government contract defense is inextricably interwoven with the issue of causation. *In re Agent Orange Product Liability Litigation,* 565 F.Supp. 1263, 1275-76 (E.D.N.Y.1983). It would be impossible to try the former without litigating and reaching conclusions as to the latter.

Even more persuasive is the extraordinary size of plaintiffs' class and the posture of the dispute. Unlike a case such as *Mertens* or *"Dalkon Shield"*, a determination on the issue of causation would do much to resolve the individual claims of the class members. The plantiffs have indicated that there are a number of types of injuries which Agent Orange allegedly caused. The court has, therefore, ordered that, for purposes of the causation issue, plaintiffs' counsel will choose representative claimants for each type of injury alleged. A determination adverse to the plaintiffs in all categories could resolve the litigation and save considerable judicial and lawyers' time. Even if there is a finding of no causation as to less than all of the types of damage alleged, that determination alone would be likely to resolve tens of thousands of individual claims. *Cf. In re Antibiotic Antitrust Actions,* 333 F.Supp. 278, 281, *modified,* 333 F.Supp. 291; 333 F.Supp. 299 (S.D.N.Y.1971).

Were there a finding of causation favorable to the plaintiffs across the board, that, too, will help resolve the individual claims of the class members. Unlike the asbestos, *DES, Dalkon Shield,* and *Federal Skywalk* cases, defendants contest liability not just as to individual members of the class, but as to any members of the class. Thus, unlike other mass product liability cases, a determination of general causation will serve both the interest of judicial economy and assist in the speedy and less expensive resolution of individual class member's claims. *Cf. Thompson v. Proctor & Gamble Co.,* No. C—80—3711 EFL (N.D.Cal. December 7, 1982), slip op. at 4; *Mertens v. Abbott Laboratories,* at 42-43. *See also* Note, Class Actions in a Products Liability Context—The Predomination Requirement and Cause-In-Fact, 7 Hofstra L.Rev. 859 (1979).

Finally, the court may not ignore the real world of dispute resolution. As already noted, a classwide finding of causation may serve to resolve the claims of individual members, in a way that determinations in individual cases would not, by enhancing the possibility of settlement among the parties and with the federal government.

The considerations already described make it clear why effective case management would not be possible were the court to pursue the alternative of allowing individual plaintiffs to intervene in a single case. A verdict in such a case either as to the affirmative defenses or causation might not be binding on the tens of thousands of plaintiffs not parties to the suit. A class action is, therefore, superior to other available methods for the fair and efficient adjudication of the controversy."

Defendants further object that even if the litigation is otherwise suited for (b)(3) certification, the need to apply the law of dozens of different states would preclude certification or at least require different subclasses for each state. In most cases, this argument would have considerable force. As this court's opinions dealing with the choice-of-law problem in diversity cases and the law applicable to manufacturers' liability will show, it is of relatively little significance in this litigation. There is, as will be demonstrated, a consensus among the states with respect to the rules of conflicts and applicable substantive law that provides, in effect, a national substantive rule governing the main issues in this case. Since, in the main, one law applies to all the claims, certification of one class is appropriate. *Cf. In re No. Dist. of Calif. "Dalkon Shield" IUD Product Liability Litigation,* 693 F.2d 847, 850 (9th Cir. 1982), *cert. denied sub nom. A.H. Robins v. Abed,* ____ U.S.____, 103 S.Ct. 817, 74 L.Ed.2d 1015 (1983).

Should there subsequently develop a need for creation of subclasses as the litigation develops and applicable substantive or procedural law requires application of individual states' laws, further subclasses can be created. *See, e.g., Halderman v. Pennhurst State School & Hospital,* 612 F.2d 84, 110 (3d Cir.1979), *rev'd on other grounds,* 451 U.S. 1, 101 S.Ct. 1531, 67 L.Ed.2d 694 (1981); *Kaufman v. Dreyfus Fund, Inc.,* 434 F.2d 727, 737 (3d Cir.1970); *Eisen v. Carlisle & Jacqueline,* 391 F.2d 555, 566 (2d Cir.1968); *In re Caesars Palace Securities Litigation,* 360 F.Supp. 366, 398 (S.D.N.Y.1973).

The last objection the defendants have to (b)(3) certification is that a class-wide trial on causation violates their right to have a single jury rule on the question of the defendants' liability to each Agent Orange plaintiff. Issues may not be bifurcated for trial, they point out, unless it appears that the issues are "so distinct and separable" that they may be tried separately "without prejudice." *Gasoline Products Co. vs. Champlin Refining Co.,* 283 U.S. 494, 500, 501, 51 S.Ct. 513, 515, 75 L.Ed. 1188 (1931); *Franchi Construction Co. v. Combined Ins. Co.,* 580 F.2d 1, 8 (1st Cir.1978). If the issues are so interwoven that separate trials would cause confusion and uncertainty, a litigant is denied his right of fair trial. As applied to the *Agent Orange* litigation, defendants contend that advising a jury in a subsequent trial on "specific" causation that there has already been a "general" determination that Agent Orange could cause plaintiff's illness would unfairly prejudice the jury in plantiff's favor. Defendants' argument is not persuasive. It is common in product liability suits for there to be a tacit admission that the defendant's product *could* have caused the injury alleged with the question for the jury being whether it actually did cause it. Juries often distinguish between general and specific causation.

In sum, the court finds (1) that the affirmative defenses and the question of general causation are common to the class, (2) that those questions predominate over any questions affecting individual members, and (3) given the enormous potential size of plaintiffs' case and the judicial economies that would result from a class trial, a class action is superior to all other methods for a "fair and efficient adjudication of the controversy."

Rule 23(b)(1)(A)

[3] Certification is sought pursuant to Rule 23(b)(1)(A). The rule requires a risk of

> (A) inconsistent or varying adjudications with respect to individual members of the class which would establish incompatible standards of conduct for the party opposing the class.

The court has already stated that "Rule 23(b)(1)(A) is not meant to apply... where the risk of inconsistent results in individual actions is merely the possibility that the defendants will prevail in some cases and not in others, thereby paying damages to some claimants and not others." 506 F.Supp. at 789 (citations omitted). If the risk of paying money damages to some and not others were sufficent for (b)(1)(A) certification, almost every class action could be certified under (b)(1)(A). *See McDonnell Douglas Corporation v. United States District Court, Central District of California,* 523 F.2d 1083, 1086 (9th Cir.1975), *cert. denied sub nom. Flanagan v. McDonnell Douglas Corporation,* 425 U.S. 911, 96 S.Ct. 1506, 47 L.Ed.2d 761 (1976); *see also* A. Miller, An Overview of Federal Class Actions: Past, Present and Future 43 (1973).

Plaintiffs attempt to distinguish the current litigation by expressing concern that if different courts decide differently future contractors will not know the possible ex-

tent of their responsibility and whether they should bid on government defense or war contracts. Their concern is commendable, but misplaced. Any inconsistent or erroneous theories of law applied by trial courts in Agent Orange cases will certainly be rectified in the highest courts. It is unlikely that the Supreme Court would avoid clarifying the law on the subject. Rule 23(b)(1)(A) is not applicable.

Rule 23(b)(1)(B)

Plaintiffs also seek certification of a mandatory class under Rule 23(b)(1)(B). Under that section, when the four prerequisites of 23(a) are met, the class will be certified if, in addition, as a practical matter, individual adjudications would prevent or greatly impede the ability of other members to protect their interests. It reads in part:

> adjudications with respect to individual members of the class ... would as a practical matter be dispositve of the interests of the other members not parties to the adjudications or substantially impair or impede their ability to protect their interests ...

The rationale for using (b)(1)(B) in mass tort litigation is that the "limited fund." As Professor Miller put the matter:

> The paradigm Rule 23(b)(1)(B) case is one in which there are multiple claimants to a limited fund ... and there is a risk that if litigants are allowed to proceed on an individual basis those who sue first will deplete the fund and leave nothing for latecomers.

A. Miller, An Overview of Federal Class Actions: Past, Present and Future 45 (1977).

As applied to mass tort litigation, the "limited fund" is generally construed to be the assets of the defendants as extended by insurance coverage and the assets of the insurers. The "fund" may also have a more limited bearing, as where the first judgments may take all of a limited punitive damage award. If earlier claimants proceed on an individual basis, it is urged, they will deplete the defendants' assets and leave nothing for later claimants. *See, e.g.*, Note, Mechanical and Constitutional Problems in the Certification of Mandatory Multistate Mass Tort Class Actions under Rule 23, 49 Brooklyn L. Rev. 517 (1983); Note, Class Actions for Punitive Damages, 81 Mich.L.Rev. 1787 (1983); Note, Class Certification in Mass Accident Cases Under Rule 23(b)(1), 96 Harv.L.Rev. 1143 (1981).

Before determining whether to certify the plaintiffs' class under (b)(1)(B), two threshold questions must be addressed. The first is whether (b)(1)(B) should ever be applied in mass tort litigation. The second, assuming that it should, is what standard to use in determining whether there is a risk that earlier litigants will deplete the fund and leave nothing for latecomers.

Although the matter is not free from doubt, most courts that have considered the issue have concluded that, in the proper circumstances, Rule (b)(1)(B) may be used in mass tort cases. *See, e.g., Green v. Occidental Petroleum Corp.*, 541 F.2d 1335, 1340 n. 9 (9th Cir. 1976); *Coburn v. 4–R Corp.*, 77 F.R.D. 43 (E.D.Ky.1977), *petition for mandamus denied sub nom. Union Light, Heat & Power Co. v. United States Dist. Court*, 588 F.2d 543 (6th Cir.1978), *cert. dismissed*, 443 U.S. 913, 99 S.Ct. 3103, 61 L.Ed.2d 877 (1979); *Hernandez v. Motor Vessel Skyward*, 61 F.R.D. 558 (S.D.Fla.1973). *See also*, Seltzer, Punitive Damages in Mass Tort Litigation: Addressing the Problems of Fairness, Effi-

ciency and Control, 52 Fordham L.Rev. 37 (1983); Note, Federal Mass Tort Class Action: A Step Toward Equity and Efficiency, 47 Albany L.Rev. 1180 (1983).

Two recent circuit courts reversed after certifications of a Rule (b)(1)(B) class in mass tort litigation. *See "Dalkon Shield,"* 693 F.2d 847 (9th Cir.1982); *Federal Skywalk Cases,* 680 F.2d 1175 (8th Cir.1982). Both courts recognized the applicability of (b)(1)(B) certification in mass tort cases. In *"Dalkon Shield,"* the court stated that "[we] are not necessarily ruling out the class action tool as a means for expediting multi-party product liability actions in appropriate cases." 693 F.2d at 851. The court's decision was based largely on the fact that no plaintiff or defendant support class certification. In *In re Federal Skywalk* cases, the court's decision was expressly based on the narrow grounds that the district court's certification violated the Anti-Injunction Act. 680 F.2d at 1183. Neither of these considerations apply here.

Courts that have considered the issue disagree over how to determine when the danger of fund exhaustion is great enough to justify certification. All conclude that "without more, numerous plaintiffs and a large ad damnum clause should not guarantee (b)(1)(B) certification." *Payton v. Abbott Labs,* 83 F.R.D. 382, 389 (D.Mass.1979). The Ninth Circuit has held that (b)(1)(B) certification is proper only when "separate punitive damage claims *necessarily* will affect later claims." *"Dalkon Shield,"* 693 F.2d at 852 (emphasis supplied). Strict adherence to the Ninth Circuit certainty standard would mean either the elimination of (b)(1)(B) certification in mass tort actions (which is the position at least one court has taken (*see Payton,* 83 F.R.D. 382, 389), or require a pretrial determination on the merits, which the Supreme Court has frowned on in another class action context. *See Eisen v. Carlisle & Jacquelin,* 417 U.S. 156, 177–78, 94 S.Ct. 2140, 2152–53, 40 L.Ed.2d 732 (1974); *cf. Dolgow v.*

Anderson, 438 F.2d 825 (2d Cir. 1970) (no mini-trial on the merits). This strict Ninth Circuit standard flies in the face of the language of Rule 23, which requires only that there be a "risk" of impairment, not that there be a conclusive determination of impairment. *See* Note, Class Certification in Mass Accident Cases Under Rule 23(b)(1), 96 Harv.L.Rev. 1143, 1158 (1983).

In *Coburn*, 77 F.R.D. at 46, one of three unreversed mass tort cases where (b)(1)(B) certification was actually granted, the court did not articulate what standard it was using, stating merely that it found a "risk" of impairment. Given the speculative nature of many of the rulings that must be made at the time of a class certification when the facts have not been fully developed, such as typicality of representative claims and adequacy of representation, the probable risk standard appears most useful.

[4] How high the probability needs to be requires an evaluation of the advantages and disadvantages of class certification to the actual and prospective parties. We must, for example, remember that the court is in the position of protecting a large group of war veterans against the possibility that after possibly winning a long-sought after victory in the courts, they will not be able to collect on a judgment in their favor. Without now rehearsing all those effects, it is enough to say that considering the particular facts of the instant litigation, the proper standard is whether there is substantial probability—that is less than a prepondérance but more than a mere possibility – that if damages are awarded, the claims of earlier litigations would exhaust the defendants' assets. Considering the needs and problems of parties aligned both as plaintiffs and defendants, the probability assessed at this time on the basis of limited information is somewhat less than 50 percent. The less-than-preponderance test is well recognized in

procedural matters. *See, e.g., Rogers v. Missouri Pacific Railroad,* 352 U.S. 500, 509–10, 77 S.Ct. 443, 450, 1 L.Ed.2d 493 (burden of coming forward in F.E.L.A. cases); *Fitzgerald v. A.L. Burbank & Co.,* 451 F.2d 670, 681 (2d Cir.1971) ("reasonable probability" of employer's negligence in F.E.L.A. cases); *Bush v. United States,* 389 F.2d 485 (5th Cir.1968) (in forfeiture case "less than prima facie legal proof ... more than mere suspicion ... reasonable under all the circumstances") *United States v. One 1975 Lincoln Continental,* 72 F.R.D. 535, 540 (S.D.N.Y.1976) ("probable cause" in forfeiture case); Note, F.E.L.A., Negligence and Jury-Trials-Speculation Upon a Scintilla, 11 Wes.Res.L.Rev. 123, 136 (1959) (interpretation supported by the "spirit of the statute"). *Cf. Calvert v. Katy Taxi, Inc.,* 413 F.2d 841 (2d Cir.1969) (naked proof of collision enough to go to jury); Morgan & Maguire, Cases and Materials on Evidence, 1076–79, 1088–94, 1106–12 (7th ed.1983); *United States v. Schipani,* 289 F.Supp. 43 (E.D.N.Y.1968), *aff'd,* 414 F.2d 1262 (2d Cir.1969), *cert. denied,* 397 U.S. 922, 90 S.Ct. 902, 25 L.Ed.2d 102 (1970); *United States v. Fatico,* 458 F.Supp. 388, *aff'd,* 603 F.2d 1053 (2d Cir.1979), *cert. denied,* 444 U.S. 1073, 100 S.Ct. 1018, 62 L.Ed.2d 755 (1980).

To determine whether that substantial probability exists in this case, the Special Master, Sol. Schreiber, was directed to conduct a limited evidentiary hearing. *Cf. "Dalkon Shield,"* 693 F.2d at 852 ("the district court erred by ordering certification without ... even a preliminary fact-finding inquiry concerning [the defendant's] actual assets, insurance, settlement experience and continuing exposure."). At the hearing, defendants' counsel submitted certified copies of their most recent balance sheets. The plaintiffs' counsel selected a cross-section of their cases and made a brief presentation as to the nature of the damage alleged. The Master found that

the combined net assets of the defendants, including insurance, total approximately $9 to $16 billion. Collection of judgments, if any, would be spread over a number of years and payment could probably be handled from year-to-year and paid out of earnings. The Master also found that, based on the information presently available, his best estimate is that the number of claims may total 40,000 to 50,000. He concluded that the evidence now before the court does not support the view that provable claims will exhaust the defendants' assets.

The court has carefully reconsidered the Master's findings and all other information before the court. It is convinced that the risks as reasonably evaluated at this stage of the litigation allow (b)(1) certification on the issue of punitive damages only. The power of the court to certify the class under more than one section is not contested by the parties. *See* Manual for Complex Litigation § 1.43 (1982).

Plaintiffs contend that the limited fund can be found here in one of two ways. First, they contend that compensatory damages will exceed the net worth of the defendants. Second, they contend that even if the compensatory damages do not satisfy (b)(1), punitive damages will.

As to their first contention, the information elicited at the hearing and in appearances before this court indicates that sufficient assets are and will be available to respond to any probable judgments. Without the aid of a full trial, on the basis of facts presently available, it cannot be said that there is a substantial probability that if plaintiffs' claims are successful, the compensatory recovery will exceed defendants' assets.

Based on information thus far supplied to the court, it also cannot be found, as a preliminary matter, that there is a substantial probability that punitive damges, if allowed will,

when added to compensatory damages, exceed defendants' assets. Apart from the equivocal nature of the evidence on the claimed callous disregard by the defendants of the effect of their product, also militating against a trial on award on punitive damges is the fact that prejudicial evidence is likely to be introduced on the punitive damage issue. Finally, there may be a policy against substantial punitive damages in a case such as this. An award of huge punitive damages might discourage government contractors from bidding for defense contracts and manufacturing material vitally needed for the national defense and might "seriously impair" the government's ability to formulate policy and make judgments pursuant to its war powers." *Sanner v. Ford Motor Co.*, 144 N.J. Super. 1, 364 A.2d 43 (1976), *aff'd*, 154 N.J. Super. 407, 381 A.2d 805 (1977), *cert. denied*, 75 N.J. 616, 384 A.2d 846 (1978).

Evidence that the government had almost as much, if not more, knowledge of the dangers posed by Agent Orange, and control by the government of its use are among the additional factors that would argue against punitive damages. It would be unfair to punish the defendants while the government, which might be equally, or even more, culpable, avoided all liability. Finally, merely instructing the jury as to punitive damages may distort the juror perceptions and make the case even more difficult to control. *See Koufakis v. Carvel*, 425 F.2d 892, 905 (2d Cir.1970).

Nevertheless, there is a substantial probability that limited punitive damages may be allowed. If they are, it would be equitable to share this portion of the possible award among all plaintiffs who ultimately recover compensatory damages. Yet, if no class is certified under Rule (b)(1)(B), nonclass members who opt out under Rule 23(b)(3) would conceivably receive all of the punitive damages or, if their cases are not completed first, none at all.

It is axiomatic that the purpose of punitive damages is not to compensate plaintiffs for their injury, but to punish defendants for their wrongdoing. In theory, therefore, when a plaintiff recovers punitive damages against a defendant, that represents a finding by the jury that the defendant was sufficiently punished for the wrongful conduct. There must, therefore, be some limit, either as a matter of policy or as a matter of due process, to the amount of times defendants may be punished for a single transaction. *See, e.g., Roginsky v. Richardson-Merrell, Inc.*, 378 F.2d 832, 838–42 (2d Cir.1967); Putz & Astiz, Punitive Damage Claims of Class Members Who Opt Out: Should They Survive?, 16 U.San.Fran. L.Rev. 1, 18–40 (1981). At the very least, a trial court in passing on future claims may admit evidence as to the payment of prior awards which may be used by a jury to reduce an award to a party seeking additional punishment for the same misconduct. *See, e.g., State ex rel. Young v. Crookham*, 290 Or. 61, 618 P.2d 1268, 1272–73 (1980); Redden, Punitive Damages, § 4.8 (1980); Restatement (Second) of Torts, § 909 (1977); Morris, Punitive Damages in Tort Cases, 44 Harv.L.Rev. 1173, 1195 (1931]. There is, therefore, a substantial probability that "adjudication with respect to individual members of the class ... would as a practical matter be dispositive of the interests of the other members not parties to the adjudication." Accordingly, a class of all those described as members of the (b)(3) class are also certified under (b)(1)(B). The (b)(1)(B) certification is for the award of punitive damages.

How this decision under (b)(1)(B) affects plaintiffs' rights to opt out under rule (b)(3) need not be decided now. In the first place, it is not clear that any appreciable number of plaintiffs will exercise their right to opt out under (b)(3). Nor is it clear that any punitive damages will be awarded. Thus, it seems sensible to allow exercise of opt-out powers, with

the ultimate effect of that decision to be left for resolution on motion, full briefing and argument.

Assessment of possible damages is for the purpose of a class certification ruling only. It does not constitute a determination of what damages will be allowed after trial.

CLASS DEFINITION AND NOTICE

There remains the question of defining the class and notice to the class. The defendants' contention that the class as the court has defined it is unworkable because it is subjective ("all veterans who were injured .. by exposure to Agent Orange") is *a non sequitur.* Subjectiveness does not affect the applicability of the class trial's finding to members of the class and it does not prejudice the defendants in any way. The class is, therefore, adequately defined and clearly ascertainable. *See Ihrke v. Northern States Power Company,* 459 F.2d 566 (8th Cir.1972).

Federal Rule 23(c)(2) provides that, in a class action maintained under Rule 23(b)(3),

> the court shall direct to the members of the class the best notice practicable under the circumstances, including individual notice to all members who can be identified through reasonable effort.

When members of the class can be identified through reasonable effort, individual notice is required; the expense of giving the notice must be paid by plaintiffs. *See Eisen v. Carlisle & Jacquelin,* 417 U.S. 156, 94 S.Ct. 2140, 40 L.Ed.2d 732 (1974); *Abrams v. Interco, Inc.,* 719 F.2d 23 at 30 (2d Cir.1983).

What is "the best notice practicable under the circumstances" and what constitues "reasonable effort" is a determination of fact to be made in the individual litigation.

In re Franklin National Bank Securities Litigation, 599 F.2d 1109 (2d Cir. 1978); *see also In re Nissan Motor Corp. Antitrust Litigation,* 552 F.2d 1088, 1098 n. 11 (5th Cir.1977) (and cases cited therein); C. Wright & A. Miller, Federal Practice & Procedure, at § 1786; Manual for Complex Litigation, § 1.45 (1982).

Accordingly, it is ORDERED:

1. Certification of this matter as a class action under Federal Rule of Civil Procedure 23(b)(3) is granted. Judge Pratt's decision certifying the class action status of this litigation under Rule 23(b)(3) is modified and confirmed. Plaintiffs' motion seeking certification under Rule 23(b)(1)(B) is granted only with respect to the claim for punitive damages.

2. The plaintiff class is defined as those persons who were in the United States, New Zealand or Australian Armed Forces at any time from 1961 to 1972 who were injured while in or near Vietnam by exposure to Agent Orange or other phenoxy herbicides, including those composed in whole or in part of 2, 4, 5-trichlorophenoxyacetic acid or containing some amount of 2,3,7,8-tetrachlorodibenzo-p-dioxin. The class also includes spouses, parents, and children of the veterans born before January 1, 1984, directly or derivately injured as a result of the exposure.

The definition does not imply a conclusion that anyone within the class was injured as a result of exposure to any herbicide.

3. Notice to the members of the class shall be provided as follows:

(a) Plaintiffs' counsel, at their own expense, shall cause a copy of the written notice, attached as Exhibit A, to be mailed by first class United States mail to all persons who have filed actions as plaintiffs in the District Courts of the

United States, or filed actions in state courts later removed to a federal court, which are pending in or have been transferred to this court for consolidated proceedings by the Panel on Multi-District Litigation, together with all persons who have moved to intervene or are intervenors, and each class member presently represented by counsel associated with plaintiffs' management committee who has not yet commenced an action or sought intervention. Mailing of the notice shall take place within 30 days of this Order.

(b) Plaintiffs' counsel, at their own expense, shall cause to be mailed a copy of the written notice to all persons who are currently listed on the United States Government's Veteran's Administration "Agent Orange Registry." This mailing shall take place within 50 days of this Order.

(c) Notice shall be mailed in envelopes that are printed only with the names of the addressee and the Clerk of this Court. Plaintiffs' counsel shall maintain a record of the name and address of each person to whom the notice is mailed. The record shall be filed with the Clerk of the Court not later than 70 days after the issuance of this Order.

(d) Plaintiffs' counsel, at their own expense, shall obtain a post office box in Smithtown, New York, 11787, in the name of the Clerk of the Court, and advise the court and the parties of the box number not later than 15 days after the issuance of this Order. The box shall be rented until further order of the court. Plaintiffs' counsel shall on a daily basis review the contents of the post office box and prepare a listing of all exclusion requests received, which shall be available to the court and the parties for inspection and copying, together with the exclusion requests. Plaintiffs' counsel shall send a copy of the notice and the exclusion request form to each person who writes to the Clerk of the Court requesting

them. Each day plaintiffs' counsel shall transmit to the court and the parties copies of any communications (other than exclusion requests or requests for forms) that are received at the post office box. Plaintiffs' counsel shall maintain a record, together with the originals, of all mail returned as undelivered.

(e) Plaintiffs' counsel, at their own expense, shall serve a radio and television announcement notice in the form of Exhibit B on the nationwide networks of the American Broadcasting Company, the Columbia Broadcasting System, the Mutual Broadcasting System, the National Broadcasting Company, and the Public Broadcasting and Television Networks and on radio stations with a combined coverage of at least 50 percent of the listener audience in each of the top one hundred radio markets in the United States within 50 days of this Order.

Along with the radio and television notice served upon the nationwide radio and television broadcasting systems and radio stations, plaintiffs' counsel shall request that the notice be read as set forth in Exhibit B without interruption or comment, either alone or in conjunction with the showing on television of the text of Exhibit B. Plaintiffs' counsel shall request that each participating radio and television broadcasting station advise them of the dates and times at which the notice was broadcast or shown.

Within 90 days of this Order, plaintiffs counsel shall furnish to the court and the parties a report identifying the name and location of each radio station broadcasting the announcement, if known, and the date and time of each announcement. The court will then determine if further notice is required.

(f) Plaintiffs' counsel, at their own expense, shall publish in the following newspapers and magazines an announcement

in two successive weeks (but if publication is monthly, only once) in the form of Exhibit C: the nationwide edition of *The New York Times, U.S.A. Today, Time Magazine, the American Legion Magazine, VFW Magazine, Air Force Times, Army Times, Navy Times, and the Leatherneck;* the ten largest circulation newspapers in Australia, including *The Australian;* and the five largest daily circulation newspapers in New Zealand, including *The Dominion*. Publication shall be completed as soon as practicable, but no later than March 1, 1984. The size of the notice shall be not less than one-eighth, nor more than one-third, of the newspaper or magazine page.

(g) Plaintiffs' counsel shall, at their own expense, obtain a toll-free "800" telephone number in the name of the Clerk of the Court. The number shall be in effect no later than January 1, 1984 to at least May 1, 1984. The number shall be manned on a daily basis, from at least Monday to Friday, 9:00 a.m. to 5:00 p.m., E.S.T., with knowledgeable persons (or a recorded announcement and recording device) who shall tell callers where to write for further information, but who shall not give advance concerning rights and responsibilities in this litigation. A record of those calling and giving their names and addresses shall be kept. Those requesting a copy of Exhibit A shall be sent one. No oral exclusion request shall be taken. Plaintiffs' counsel shall give written instructions to those answering the phone. A copy of such instructions and any recorded announcement shall be filed with the Clerk.

(h) The Clerk of the Court shall send this order and notice to the Governor of each of the states of the United States. He shall respectfully request each Governor to refer the notice to any state organization created by the executive or legislative branches dealing with the problems of Vietnam veterans and request that the notice be sent to all those known Vietnam

veterans who may be members of the class described in the Order, or that a list of names and addresses be supplied to this court so that notice may be mailed by the plaintiffs' counsel. The Clerk shall respectfully request a list of those to whom notice has been sent by any state agency.

(i) The notice provided for in this Order is the best reasonable and practicable notice under the circumstances of this litigation.

This Order is stayed for seven days to permit an application for a further stay to the Court of Appeals.

So Ordered.

Exhibit A

LEGAL NOTICE TO CLASS MEMBERS OF PENDENCY OF CLASS ACTION

This notice is given to you pursuant to an Order of the United States District Court for the Eastern District of New York and Rule 23(c)(2) of the Federal Rules of Civil Procedure. It is to inform you of the pendency of a class action in which you may be a member of the class, and of how to request exclusion from the class if you do not wish to be a class member. None of the claims described below have been proven. It is contemplated that a trial by court and jury will take place in this court beginning in May, 1984.

1. There are now pending in the United States District Court for the Eastern District of New York claims brought by individuals who were in the United States, New Zealand, or Australian Armed Forces assigned to or near Vietnam at any time from 1961 to 1972, who allege personal injury from exposure to "Agent Orange" or other phenoxy herbicides, including those composed in whole or in part of 2, 4, 5-trichlorophenoxyacetic acid or containing some amount of 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin (collectively referred to as "Agent Orange").

2. The plaintiffs include spouses, parents, and children born before January 1, 1984, of the service persons who claimed direct or derivative injury as a result of exposure. Plaintiffs include children asserting claims in their own right for genetic injury and birth defects caused by their parents' exposure to "Agent Orange" and other phenoxy herbicides. Wives of veterans exposed to "Agent Orange" in Vietnam seek to recover in their own right for miscarriages. Plaintiffs' theories of liability include negligence, strict products liability, breach of warranty, intentional tort and nuisance. Damage claims of family members include pecuniary loss for

wrongful death, loss of society, comfort, companionship, services, consortium, guidance and support. In addition, plaintiffs seek punitive damages for defendants' alleged misconduct in furnishing herbicides to the United States Government.

3. The defendants, who are alleged to have manufactured or sold "Agent Orange" to the United States Government, are Dow Chemical Company, Monsanto Company, T.H. Agriculture & Nutrition Company, Inc., Diamond Shamrock Chemicals Company, Uniroyal, Inc., Hercules Incorporated, and Thompson Chemical Corporation. All the defendants deny that the plaintiffs' alleged injuries were in any way caused by "Agent Orange." They assert that injury, if any, was not caused by a product produced by them. The defendants have challenged these suits on various other grounds including plaintiffs' lack of standing to sue, lack of jurisdiction, statutes of limitation, insufficiency in law, plaintiffs' contributory negligence, and plaintiffs' assumption of known risks. Each has also asserted such affirmative defenses as the "government contract defense" and the Government's misuse of its product. In third-party complaints, the defendants asserted claims against the United States of America seeking indemnification or contribution in the event the defendants are held liable to the plaintiffs. The Government has asserted its power to prevent anyone from suing it.

4. This court has certified a class action in this proceeding under Rule 23(b)(3) of the Federal Rules of Civil Procedure. The plaintiff class consists of those persons who were in the United States, New Zealand, or Australian Armed Forces assigned to Vietnam at any time from 1961 to 1972 who were injured while in or near Vietnam by exposure to "Agent Orange" or other phenoxy herbicides including those composed in whole or in part of 2,4,5-trichlorophenoxyacetic acid or containing some amount of 2,3,7,8-tetrachloro-

dibenzo-p-dioxin. The class also includes spouses, parents, and children born before January 1, 1984, directly or derivatively injured as a result of the exposure.

The court may reconsider this decision, by decertifying, modifying the definition of the class, or creating subclasses in the light of future developments in the case. The definition does not imply a conclusion that anyone within the class was injured as a result of exposure to any herbicide.

5. The court has also certified a Rule 23(b)(1)(B) class limited to claims for punitive damages. The class includes the same persons as are in the Rule 23(b)(3) class. The court has decided not to permit members of the class to seek exclusion on the issue of punitive damages. You will therefore be bound by the court's rulings on punitive damages whether or not you seek exclusion on the issue of compensatory damages.

6. Trial of the representative plaintiffs' claims is scheduled to commence before Jack B. Weinstein, Chief Judge of the United States District Court for the Eastern District of New York, and a jury on May 7, 1984.

7. If you are a member of the plaintiff class you will be deemed a party to this action for all purposes unless you request exclusion from the Rule 23(b)(3) class action covering compensatory damages.

8. If you do not request exclusion from the class by May 1, 1984, you will be considered one of the plaintiffs of this class action for all purposes. You may enter an appearance through counsel of your own choice. You will be represented by counsel for the class representatives unless you choose to enter an appearance through your own legal counsel.

9. Class members who do not request exclusion will receive the benefit of, and will be bound by, any settlement or

judgment favorable to the class covering compensatory damages. The class representatives' attorneys fees and costs will be paid out of any recovery of compensatory and other damages obtained by the class members. You will not be charged with costs or expenses whether or not you remain a member of the class. However, if you choose to enter an appearance through your own legal counsel, you will be liable for the legal fees of your personal counsel.

10. Class members who do not request exclusion will be bound by any judgment adverse to the class, and will not have the right to maintain a separate action even if they have already filed their own action.

11. If you wish to remain a member of the class for all purposes, you need do nothing at this stage of the proceedings

12. *If you wish to be excluded from the class for compensatory damages, you must submit a written request for exclusion.* For your convenience, the request for exclusion may be submitted on the attached form, entitled "Request for Exclusion." If you received this notice by mail, A request for Exclusion form should have accompanied it. If you did not receive a Request for Exclusion form, you may obtain a copy by writing to the Clerk of the Court, P.O. Box ——, Smithtown, New York 11787. A written Request for Exclusion may be submitted without using the Request for Exclusion form, but it must refer to the litigation as "In re 'Agent Orange' Product Liability Litigation, MDL No. 381"; include your name and address in your statement requesting exclusion. Any request for exclusion must be received on or before May 1, 1984 by the Clerk of the United States District Court for the Eastern District of New York at Post Office Box ——, Smithtown, New York, 11787 or at a federal courthouse in the Eastern District of New York.

13. Under the court's Order, all potential plaintiffs are deemed to be members of a Rule 23(b)(1)(B) class on the issue of punitive damages. At the time of trial the court will determine whether the facts presented warrant the submission of a punitive damage claim to the jury. In the event that there is a recovery for punitive damages, it will be shared by those plaintiffs who are successful in prosecuting their claims in this or other suits on an appropriate basis to be determined by the court. If you choose to exclude yourself from this class action on the issue of compensatory damages, you may do so without necessarily losing your right to share in any punitive damages.

14. The plaintiffs in this class action are represented by a group of attorneys who have been tentatively approved by the Court as the Agent Orange Plaintiffs' Management Committee. Members of this committee include:

Phillip E. Brown, Esq.
Hoberg, Finger, Brown, Cox & Molligan
703 Market Street (18th Floor)
San Francisco, California 94103

Stanley M. Chesley, Esq.
Waite, Schneider, Bayless and Chesley Co. L.P.A.
1513 Central Trust Tower
Fourth and Vine Streets
Cincinnati, Ohio 45202

David J. Dean, Esq.
Dean, Falanga & Rose
One Old Country Road
Carle Place, New York 11514

Thomas W. Henderson, Esq.
Baskin & Sears
Frick Building (10th Floor)
Pittsburgh, Pennsylvania 15219

Benton Musslewhite, Esq. &
John O. O'Quinn, Esq.
609 Fannin (Suite 517)
Houston, Texas 77002

Stephen J. Schlegel, Esq.
Schlegel & Trafelet, Ltd.
One North LaSalle Street
Suite 3900
Chicago, Illinois 60602

Newton B. Schwartz, Esq.
Houston Bar Center Building
723 Main (Suite 325)
Houston, Texas 77002

David J. Dean, Esq. has been dsesignated by the court as plaintiffs' spokesman. The Management Committee is being aided in its duties of representing the interests of the plaintiffs by other law firms in the United States and abroad.

15. *Examination of pleadings and papers*. This notice is not all inclusive. References to pleadings and other papers and proceedings are only summaries. For full details concerning the class action and the claims and defenses which have been asserted by the parties, you or your counsel may review the pleadings and other papers filed at the office of the Clerk of the United States District Court for the Eastern District of New York, 225 Cadman Plaza East, Brooklyn, New York 11201, on any business day from 9:00 a.m. to 5:00 p.m.

16. *Intrepretation of this Notice*. Except as indicated in the orders and decisions of the United States District Court for the Eastern District of New York, no court has yet ruled on the merits of any of the claims or defenses asserted by the parties in this class action. This notice is not an expression of an opinion by the court as to the merits of any claims or defenses. This notice is being sent to you solely to inform you of the nature of the litigation, your rights and obligations as a class member, the steps required should you desire to be excluded from the class, the court's certification of the class, and the forthcoming trial.

Robert C. Heinemann
Clerk, United States District
Court for the Eastern District
of New York

DATED: Brooklyn, New York
January 12, 1984

EXCLUSION REQUEST FORM

Clerk
United States District Court
for the Eastern District of New York
P.O. Box ____
Smithtown, New York 11787

Re: In re "Agent Orange" Product Liability Litigation MDL No. 381 _____

I hereby request to be excluded from the class action in the above-captioned matter.

_____
(signature)

Name (print): _____

Address: _____

_____

If not a member of the armed forces who served in or near Vietnam, how are you related to such a serviceperson? _____

_____

Armed forces unit of serviceperson _____

Armed forces identifying number of serviceperson _____

Period of service in or near Vietnam _____

_____

I learned about this suit by _____

_____

Exhibit B (Radio and Television Communication)

SPECIAL ANNOUNCEMENT

Were you or anyone in your family on military duty in or near Vietnam at any time from 1961 to 1972? If so, listen carefully to this important message about a pending "Agent Orange" lawsuit that may affect your rights.

If you or anyone in your family claim injury, illness, disease, death, or birth defect as a result of exposure to "Agent Orange," or any other herbicide in or near Vietnam at any time from 1961 to 1972, you are now a member of a class in an action brought on your behalf in the United States District Court for the Eastern District of New York, unless you take steps to exclude yourself. The class is limited to those who were injured by exposure to Agent Orange or any other herbicide while serving in the armed forces in or near Vietnam at any time from 1961 to 1972. The class also includes members of families who claim derivative injuries such as those to spouses and children.

The court expresses no opinion as to the merit or lack of merit of the lawsuit. It has ordered that this message be transmitted to give as many persons as is practicable notice of this suit.

For details about your rights in this "Agent Orange" class action lawsuit, call 1-800-_____, or write to the Clerk of the United States District Court, Box ___, Smithtown, New York 11787. That address again is Clerk of the United States District Court, Box ___, Smithtown, New York 11878, or call 1-800-_____.

Exhibit C (Newspaper and Magazine Notice)

TO ALL PERSONS WHO SERVED IN OR NEAR VIETNAM AS MEMBERS OF THE ARMED FORCES OF THE UNITED STATES, AUSTRALIA AND NEW ZEALAND FROM 1961-1972

If you or anyone in your family can claim injury, illness, disease, death or birth defect as a result of exposure to "Agent Orange" or any other herbicide while assigned in or near Vietnam at any time from 1961 to 1972, you are a member of a class in an action brought on your behalf in the United States District Court for the Eastern District of New York unless you take steps to exclude yourself from the class. The class is limited to those who were injured by exposure to "Agent Orange" or any other herbicide while serving in the armed forces in or near Vietnam at any time during 1961-1972. The class also includes members of families who claim derivative injuries such as those to spouses and children.

The court expresses no opinion as to the merit or lack of merit of the lawsuit.

For details about your rights in this "Agent Orange" class action lawsuit, call 1-800-_____, or write to Clerk of the Court, Box _____, Smithtown, New York 11787.

Robert C. Heinemann
Clerk, United States District
Court for the Eastern District of New York

DATED: Brooklyn, New York
December , 1983

In re "AGENT ORANGE" PRODUCT LIABILITY LITIGATION.

MDL No. 381.

United States District Court,
E.D. New York.

May 8, 1985.

* * * * *

Robert C. Taylor, Jr., Ashcraft & Gerel, Washington, D.C., for plaintiffs.

Leonard Rivkin, Rivkin, Leff, Sherman & Radler, Garden City, N.Y., Philip Pakula, Townley & Updike, Wendell B. Alcorn, Jr., Cadwalader, Wickersham & Taft, William Krohley, Kelley, Drye & Warren, Thomas Beck, Arthur, Dry & Kalish, New York City, Bruce Hecker, Shea & Gould, New York City, of counsel, David R. Gross, Budd, Larner, Kent, Gross, Picillo & Rosenbaum, New York City, Pual V. Esposito, Lewis, Overbeck & Furman, Chicago, Ill., Henry G. Miller, Clark, Gagliardi & Miller, White Plains, N.Y., for defendants.

Arvin Maskin, Dept. of Justice, Washington, D.C., for third party defendant U.S.

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WEINSTEIN, Chief Judge.

I. INTRODUCTION

Defendants, seven chemical companies, have moved to dismiss or in the alternative for summary judgment. Plaintiffs are Vietnam veterans and members of their families who have opted out of the class previously certified by the court pursuant to Rule 23(b)(3) of the Federal Rules of Civil Procedure. *In re "Agent Orange" Product Liability Litigation,* 100 F.R.D. 718 (E.D.N.Y.), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). They allege that as a result of the veterans' exposure to Agent Orange, a herbicide manufactured by the defendants, they suffer from various health problems.

Defendants contend that they are entitled to judgment dismissing the claims asserted against them because of each plaintiff's conceded inability to identify the individual manufacturer of the Agent Orange to which a given veteran was exposed, inapplicability of any alternative theory of liability that would overcome that inability, the government contract defense, and inability of any plaintiff to prove that his or her injuries were caused by Agent Orange.

Plaintiff Vietnam veterans do suffer. Many deserve help from the government. They cannot obtain aid through this suit against private corporations.

These issues have been discussed extensively in the court's Preliminary Memorandum and Order on Settlement, *In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 876-78 (E.D.N.Y.1984) (citing opinions published in this litigation), and the reader is respectfully referred to it for elaboration. *See also, e.g., In re "Agent Orange" Product Liability Litigation,* 603 F.Supp. 239 (E.D.N.Y.1985) (actions against government by veterans, wives and children dismissed on law and for failure to prove causation).

The most serious deficiency in plaintiff's case is their failure to present credible evidence of a causal link between exposure to Agent Orange and the various diseases from which they are allegedly suffering. Various other reasons why the motion for summary judgment must be granted are set forth below.

The mere fact that this case involves claims of negligence does not preclude granting summary judgment. *See, e.g., Haugen v. United States,* 492 F.Supp. 398, 400 (E.D.N.Y.), *aff'd without opinion,* 646 F.2d 560 (2d

Cir.1980); *INA Aviation Corp. v. United States,* 468 F.Supp. 695, 699 (E.D.N.Y.), *aff'd without opinion,* 610 F.2d 806 (2d Cir.1979). Nevertheless, the practice is somewhat unusual. We have, therefore, set out below in some detail the facts and analysis of the cases bearing on the matter.

II. PROCEDURAL BACKGROUND

The claims of 281 servicepersons who have opted out of the class are embodied in sixteen different cases. One case began the Agent Orange litigation with the filing of a 162-page complaint in this district on February 23, 1979. *Dowd v. Dow Chemical Co.,* Civil Action No. 79-467. The others were consolidated in this court for pre-trial proceedings by the Judicial Panel on Multidistrict Litigation ("MDL Panel"). Plaintiffs seek relief on theories of negligence, strict liability, breach of warranty, intentional tort, and nuisance.

This court certified a class action against the defendant chemical companies pursuant to Rule 23(b)(3). *See In re "Agent Orange" Product Liability Litigation,* 506 F.Supp. 762, 787-92 (E.D.N.Y.1980), *modified,* 100 F.R.D. 718 (E.D.N.Y.1983), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____ U.S. ____, 104 S.Ct. 1417, 79 L.Ed.2d 743 (1984). The class was defined as "those persons who were in the United States, New Zealand or Australian Armed Forces at any time from 1961 to 1972 who were injured while in or near Vietnam by exposure to Agent Orange or other phenoxy herbicides, including those composed in whole or in part of 2, 4, 5-trichlorophenoxyacetic acid or containing some amount of 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin." 100 F.R.D. at 729. The class also included spouses, parents, and children of the veterans born before January 1, 1984 directly or derivatively injured as a result of the exposure.

A separate class was certified on the issue of punitive damages under Federal Rule of Civil Procedure 23(b)(1)(B). Potential class members were allowed to opt out of the Rule 23(b)(3) class but not out of the Rule 23(b)(1)(B) class. 100 F.R.D. at 728.

Extensive notice of the class certification was given., *See* 597 F.Supp. 740, at 756-57. The notice included a Request for Exclusion Form to be completed by anyone wishing to opt-out of the class. *Id.*

Over 2.6 million veterans from the United States, Australia, and New Zealand served in Vietnam during the relevant period. Letter from Arvin Maskin, Trial Attorney, Torts Branch of the Department of Justice dated March 29, 1985. The number of persons from that group said to have been exposed to Agent Orange has been estimated in the order of 600,000 or more. *See* 597 F.Supp. 740 at 756. The class size is far larger since it includes family members of the exposed veterans.

As of May 6, 1984, the Eastern District's Clerk's Office had received 2,440 requests to be excluded from the class, but a substantial number of these opted back in. *See* 597 F.Supp. 740 at 756. The 281 plaintiffs in the captioned cases under consideration at this time, together with the plaintiff in *Lilley v. Dow Chemical Co.*, 105 F.R.D. 577, Civil Action No.80-2284, appear to comprise all the opt-outs whose claims are not pending in this court. Some of the remaining opt-outs apparently have not yet filed suit; if they do, their cases presumably will be transferred to this court. A considerable number of opt-outs have been dismissed without opposition or for a variety of reasons not germane to the present discussion.

After settling with members of the class on May 7, 1984, defendants moved on July 24, 1984 for summary

judgment in the opt-out cases and a number of cases brought by civilians. On December 10, 1984, the court heard oral argument on defendants' motion. Defendants offered overwhelming proof that no causal connection exists between exposure to Agent Orange and development of miscarriages or birth defects. In response, the veterans' wives and children produced no evidence sufficient to create an issue of material fact on causation. *See also In re "Agent Orange" Product Liability Litigation,* 603 F.Supp. 239 (E.D.N.Y.1985) (dismissing claims of wives and children against government).

The court adjourned consideration of the opt-out veterans' claims against the chemical companies to allow plaintiffs' counsel time to produce evidence of causation. Counsel produced the affidavit of Dr. Barry M. Singer and 189 accompanying affidavits on January 24, 1985. At that time, the court, at the request of plaintiffs' counsel, allowed plaintiffs fifteen days to produce additional affidavits; the court's order stated that "no further extensions [would] be granted." *See* Order dated January 24, 1985. Nevertheless, on March 12, 1985, without leave for late filing, counsel produced a second affidavit by Dr. Singer with 93 accompanying affidavits. On that day, counsel also produced a general affidavit by Dr. Samuel S. Epstein with 15 accompanying affidavits.

Subsequently, counsel for plaintiffs, by application dated April 23, 1985, sought 60 additional days to file further affidavits on behalf of 21 opt-out plaintiffs on whose behalf nothing has been submitted by plaintiffs' counsel. This motion for additional time was denied on April 29, 1985. These plaintiffs' cases therefore are dismissed for failure to oppose the summary judgment motion.

Counsel for defendants moved to strike these additional materials as untimely on March 13, 1985 and again on March 18, 1985. The court reserved decision and granted defendants' request to adjourn oral argument on the summary judgment motion from March 18 until April 15. Oral argument was heard on that date. In view of the importance of the matter, rejection on the ground of lateness of any papers heretofore filed seems inappropriate. The court has in fact considered all of the voluminous papers filed up to April 30, 1985 by both sides, as well as all documents in all the related MDL cases, including those studies and reports filed on the court's own motion as it announced from time to time that it was taking judicial notice. Since no objection to the taking of judicial notice has been made, all of the papers encompassed in the more than 6,000 docket entries in this complex multidistrict litigation are before the court and are relied upon in deciding the motion for summary judgment. *See* Federal Rules of Evidence, Rule 201.

III. FACTS

In support of their contention that Agent Orange did not cause the various ailments that allegedly afflict the veteran plaintiffs, defendants rest upon a number of epidemiological studies. As this court has indicated in extensive and repeated recorded colloquy with counsel and in prior opinions, *e.g.*, *In re "Agent Orange" Product Liability Litigation*, 597 F.Supp. 740, 777-95 (E.D. N.Y.1984), all reliable studies of the effect of Agent Orange on members of the class so far published provide no support for plaintiffs' claims of causation. *See also In re "Agent Orange" Product Liability Litigation*, 603 F.Supp. 239 (E.D.N.Y.1985) (granting summary judg-

ment against the veterans' wives and children in their case against the government for failure to show causation).

A. *Epidemiological Studies*

Epidemiological studies rely on "statistical methods to detect abnormally high incidences of disease in a study population and to associate these incidences with unusual exposures to suspect environmental factors." Dore, "A Commentary on the Use of Epidemiological Evidence in Demonstrating Cause-in-Fact," 7 Harv. Envtl. L. Rev. 429, 431 (1983). In their study of diseases in human populations, epidemiologists use data from surveys, death certificates, and medical and clinical observations. *Id.*

A number of sound epidemiological studies have been conducted on the health effects of exposure to Agent Orange. These are the only useful studies having any bearing on causation.

All the other data supplied by the parties rests on surmise and inapposite extrapolations from animal studies and industrial accidents. It is hypothesized that, predicated on this experience, adverse effects of Agent Orange on plaintiffs might at some time in the future be shown to some degree of probability.

The available relevant studies have addressed the direct effects of exposure on servicepersons and the indirect effects of exposure on spouses and children of servicepersons. No acceptable study to date of Vietnam veterans and their families concludes that there is a causal connection between exposure to Agent Orange and the serious adverse health effects claimed by plaintiffs. Chloracne and porphyria cutanea tarda are the only two diseases that have been recognized by Congress as having some possible con-

nection to Agent Orange exposure, but no proof has been shown of any relationship of these disease to these plaintiffs. *See In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 856 (E.D.N.Y.1984) (of all Vietnam veterans, no chloracne and 2 porphyria cutanea tarda cases are recognized as having a connection with Vietnam, but not necessarily with Agent Orange); Veterans Administration, Adjudication of Claims Based on Exposure to Dioxin or Ionizing Radiation, 50 Fed.Reg. 15848, 15849-50 (April 22, 1985). *See also, e.g.,* Tr. at 182 (Hearings March 5, 1985) (comments of David Dean for Plaintiffs' Management Committee) ("chloracne without disability is not compensable" out of Agent Orange funds).

1. *Miscarriages and Birth Defects*

The claims of the opt-out wives and children were dismissed orally on December 10, 1984 and many of them subsequently rejoined the class. Evidence regarding their claims is, however, still relevant because it suggests that the veterans' concerns about their ability to reproduce healthy children are, like their concerns about their own health problems, unrelated to Agent Orange exposure. It must be recalled that plaintiffs' counsel pressed these claims of children and wives with at least as much vigor as those of the veterans, relying on much the same kind of inadequate proof now reasserted in connection with the veterans' claims.

The studies to date conclude that there is as yet no epidemiological evidence that paternal exposure to Agent Orange causes birth defects and miscarriages. *See, e.g.,* Erickson, Mulinare, *et al.,* "Vietnam Veterans' Risks for Fathering Babies with Birth Defects," 252 J.A.M.A. 903-12 (1984); J.D. Erickson, J. Mulinare, *et al., Vietnam Veterans' Risks for Fathering Babies with Birth Defects,*

published by the U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control (August, 1984) ("CDC study"); J.W. Donovan, *et al., Case-control Study of Congenital Anomalies and Vietnam Service (Birth Defects Study): Report to the Minister for Veterans' Affairs,* January 1983, published by Australian Government Publishing Service, Canberra (1983) ("Australian study"); Donovan, MacLennan and Andena, "Vietnam service and the risk of congenital anomalies," 140 Med. J. of Australia, 394 (March 31, 1984). *See also, e.g.,* the discussion of lack of proof of causation in *In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 749, 775-95 (E.D.N.Y.1984).

In a comprehensive epidemiological examination of 96 categories of birth defects occurring among subsequently conceived offspring of American servicemen who served in Vietnam, the authors of the CDC study concluded: "This study provides strong evidence that Vietnam veterans, in general, have not been at increased risk of fathering babies with the aggregate of the types of defects studied here." CDC study at 2. The CDC study further concluded: "At present, *no adverse human reproductive effects have been shown to be related to exposure to phenoxy herbicides and dioxin." Id.* at 67 (emphasis supplied).

The conclusions of the Australian study are similarly negative:

> There is no evidence that Army service in Vietnam increases the risk of fathering children with anomalies diagnosed at birth.

Donovan, MacLennan and Andena, "Vietnam service and the risk of congenital anomalies," 140 Med.J. of Australia 394 (March 31, 1984). *See also* CDC study at 6-7 (number

of offspring of Vietnam veterans with serious birth defects no greater than the population at large); *cf.* House Rep. No. 98-592 on Veterans' Dioxin and Radiation Exposure Compensation Standards Act, *reprinted in* 1984 U.S.Code Cong. & Admin.News 4449, 4453 ("insufficient credible scientific evidence" that veterans exposed to Agent Orange are experiencing higher incidence of medical problems).

2. *Veterans' Health*

Epidemiological studies addressing the effect of Agent Orange exposure on veterans' health have not furnished support for plaintiffs' claims. They have been negative or inconclusive.

The Air Force study is the most intensive examination to date of Agent Orange effects on exposed veterans. *See* Air Force Health Study, *An Epidemiolgic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides* (February 24, 1984) (Ranch Hand II Study – 1984 Report). This study utilized 1,024 matched pairs of men for analysis. *Id.* at v. Essentially all those who had participated in the fixed wing spraying and who could be located were studied. The conclusion was negative. In summary,

> This baseline report concludes that there is insufficient evidence to support a cause and effect relationship between herbicide exposure and adverse health in the Ranch Hand group at this time.

Id. at iii. Significantly, "no cases of chloracne were diagnosed clinically or by biopsy." *Id.* at iii, XV-9.

The small Ranch Hand sample and other factors, particularly the length of time it takes for most cancers to develop, support the conclusion that more work is needed

before any firm conclusion can be reached respecting morbidity. *Id.* at v. The authors suggest a 20-year mortality follow-up study. *Id.* at v., XVIII-1-3.

The Ranch Hand Study authors state that "[i]n full context, the baseline study results should be viewed as reassuring to the Ranch Handers and their families at this time." *Id.* at iii; *see also id.* at XIV-4 to XIX-9. Their study offers no solace to plaintiffs in the instant litigation. It is at best inconclusive. *See In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 788 (E.D.N.Y.1984).

A comprehensive study by the Centers for Disease Control may be available after mid-1989. *See* Centers for Disease Control, *Protocol for Epidemiologic Studies of the Health of Vietnam Veterans* (November 1983). *But cf.* McIntyre, "End to Dixoin Study Fund Asked," *Newsday,* May 1, 1985, at 25, col. 1 (White House scientist Alvin L. Young, a toxicologist, recommends that no further research on dioxin should be funded, "because research has failed to show it causes cancer or birth defects in humans.").

No valid state study supports plaintiffs' causality claims. *See In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 787 (E.D.N.Y.1984); *see also* 3 *Agent Orange Review* 1 (July 1984) (describing ongoing studies); Agent Orange Advisory Committee to the Texas Department of Health, Guy R. Newell, Chairman, *Development and Preliminary Results of Pilot Clinical Studies* 13, 15-19 (March 6, 1984) (Texas study).

Two recently-released studies fail to establish any causal connection. A comparison of New York State Vietnam veterans with veterans of that era who did not serve in Vietnam revealed no increased incidence of disease. Lawrence, *et al., Mortality Patterns of New York State Viet-*

nam Veterans, 75 AJPH 277 (1985). The authors note that the long induction period involved in some of the diseases suggest the need for further study, but conclude:

> Overall, these studies show no remarkable disease differences between Vietnam veterans and other veterans of that era. To the extent that Vietnam service may be indicative of dioxin-contaminated herbicide exposure, we find no suggested association with cause of death.

Id. at 279.

The comprehensive three-part Australian study is similarly negative. Australian Veterans Health Studies, *The Mortality Report* (1984). In 1980, the government of Australia commissioned the Commonwealth Institute of Health to conduct a series of scientific studies of the health of Vietnam veterans and their families. The Commission undertook a retrospective cohort study of mortality among former national servicemen of the Vietnam era, which is reported in Part I of the *Report.* Australian forces that served in Vietnam were exposed at least as heavily as United States forces to Agent Orange. *See* Tr. at 479 (San Francisco Hearings, August 24, 1984).

This duty sought to determine whether death rates among Vietnam veterans were higher than among comparable non-veterans for all causes of death combined. The study included 46,166 subjects: 19,209 veterans who served in Vietnam or Vietnam waters for over 90 days and did not die prior to two years of service, and 26,957 non-veterans. Information about the study subjects was obtained through death registers, medical certificates, and military and nonmilitary records. The follow-up rate was high, and the authors conclude that the data used was of "high quality." "Executive Summary," at vii.

The study found the death rate among study subjects – both veterans and non-veterans – "statistically significantly lower than expected for Australians males, taking age and calendar year into account." *Id.* Mortality among veterans was not higher than that among non-veterans in a statistically significant sense, except among Veterans who were members of The Royal Australian Engineers. *Id.* at viii. Part III of the Report offers several possible explanations for this discrepancy, none of them attributabe to Agent Orange. *See* Part III, "The Relationship Between Aspects of Vietnam Service and Subsequent Mortality Among Australian National Servicemen of the Vietnam Conflict Era," at 41-46 (1984).

With respect to specific causes of death, the Report found no statistically significant difference in death rates from cancer among veterans and non-veterans. In particular, the study found that:

> there was no statistically significant difference in the death rates from soft tissue sarcoma or non-Hodgkin's lymphoma. Other studies have indicated that both cancers are possibly caused by phenoxy acetic acid herbicides * * * sprayed in Vietnam.

Part I, "Executive Summary," at ix.

The study found no statistically significant difference in death rates from a number of other causes of death, including diseases of the skin, of the musculoskeletal system and connective tissue, of the blood, and of the neoplasmic, endocrine, nutritional, metabolic, and circulatory systems. *Id.* at ix-x; *see also id.* at 79-90. The study attributed a higher veteran mortality rate from diseases of the digestive system to alcoholism. *Id.* at x; *see also id.* at 88.

While cautioning that diseases such as cancer may take longer to develop, *id.* at ix, the Australian study found no evidence of an excess of deaths among the veterans studied due to "unusual causes." *Id.* at x. Such evidence – had it surfaced – *"might have suggested* that some deaths of veterans *might have been* caused by a specific toxin or pathogen." *Id.* (emphasis upplied).

Congress agrees with this generally negative assessment of the effect of Agent Orange exposure. The House Report accompanying the recent Veterans' Dioxin and Radiation Exposure Compensation Standards Act, Pub.L. No. 98-542, 98 Stat. 2725 (1984), states that "[t]here is no consensus of opinion in the scientific community that exposure to dioxin causes any identifiable disability other than chloracne." House Rpt. No. 98-592 (Veterans' Affairs Comm.) at 5, *reprinted in* 1984 Cong. & Ad.News 4449, 4451. As of May 22, 1984, Senator Cranston noted that:

> Although 13 chloracne cases have been granted service connection, the VA reported in a May 17, 1984 letter * * * that it appeared after review that none of the cases, in fact, involved chloracne.

Cong.Rec.Sen. S.6145 (daily ed. May 22, 1984). The House Report concluded that "it is generally agreed that there is insufficient credible scientific evidence that this group of veterans has demonstrated they are experiencing any higher incidence or frequency of medical problems related to their possible exposure to dioxin while in service as to warrant a statutory presumption that such medical problems are related to military service." House Rept. at 7, *reprinted in* 1984 Cong. & Ad.News 4449, 4453.

Plaintiffs cite a number of studies conducted on animals and industrial workers as evidence of a causal link between

exposure to TCDD and the development of various hepatotoxic, hematotoxic, genotoxic, and enzymatic responses. None of these studies do more than show that that there may be a causal connection between dioxin and disease. None show such a connection between plaintiffs and Agent Orange.

Plaintiffs also rely on several depositions and affidavits by experts. As indicated below, to the extent that these experts rely on available epidemiological studies, the studies supply no basis for an inference of causation. There is simply no other reliable data on which an expert can furnish reliable testimony. Thus, no expert tendered by plaintiffs would be permitted to testify under Rules 702 and 703 of the Federal Rules of Evidence.

B. *Expert Affidavits*

Even most of plaintiffs' experts express doubt about causation, except for some ill-defined possible "association" as compared with associations with any specific other products or natural carcinogens; none supports the conclusion that present evidence permits a scientifically acceptable conclusion that Agent Orange did cause a specific plaintiff's specific diseae. *See, e.g.*, Report of Dr. Hyman J. Zimmerman, *Comments on Porphyria Cutanea Tarda & Related Matters* ("[t]he relevance of [liver destruction and cancer] to man and the relevance of liver injury and PCT to exposure to DIOXIN *remains to be evaluated* by proper epidemiologic studies.") (Plaintiffs' Supplemental Memorandum in Support of Plaintiffs' Opposition to defendants' Motion for Summary Judgment, Ex. 8; emphasis supplied); Deposition of Dr. Ellen Silbergeld, at 321 ("I *think* there is *an association* [between exposure to Agent Orange and lymphoma]") (*Id.*, Ex. 2; emphasis supplied); Depositon of Dr. Marvin Schneider-

man, at 50 ("rhabdomyosarcoma * * * is more likely, in my opinion, to have been related to that exposure than to some other not known ill-defined set of causes." (Id., Ex. 3; emphasis supplied); *id.* at 144 ("Lymphocitic lymphoma * * * *could be* related to exposure * * * to Agent Orange") (*Id.*, Ex. 3; emphasis supplied); Deposition of Dr. Maureen C. Hatch, at 54 ("there *may be* a causal *association*") (Opt-out Plaintiffs' Opposition to Defendants' Motion to Dismiss, or in the Alternative, for Summary Judgment, Ex. 6; emphasis supplied).

It is significant that like Doctors Singer and Epstein, whose affidavits are described in detail below, the various experts referred to in the preceding paragraph apparently had no physical contact with individual plaintiffs. For example, Dr. Silbergeld, whose opinion is relied upon heavily in plaintiffs' briefs, states:

> In preparing this affidavit, I have not seen any material related to the plaintiffs in this litigation, no medical records or other descriptons of the medical status of these persons.

Undated Aff. of Dr. Ellen K. Silbergeld, ¶ 4 at 2, Ex. 5 to Opt-Out Plaintiffs' Opposition to Defendants' Motion to Dismiss or, in the Alternative, for Summary Judgment.

Plaintiffs' Supplemental Memorandum in Support of Plaintiffs' Opposition to Defendants' Motion for Summary Judgment devotes considerable attention to the specific background of one David Lambiotte, with reference to expert opinions inferring that his illnesses were caused by Agent Orange exposure. *Id.* at 3-6. Much of this discussion is irrelevant to the specific opt-out cases currently before the court. Mr. Lambiotte, for example, is a member of the class and filed a claim form seeking to

share in the settlement proceeds. *See* Claim No. 28397 (on file at Agent Orange Computer Center).

Plaintiffs offer the opinion of two experts who conclude that in the cases of the specific opt-out plaintiffs before the court, exposure to Agent Orange caused adverse health effects. One is Dr. Singer's submission. The other is Dr. Epstein's.

1. *Dr. Singer's Affidavit*

Plaintiffs submitted two affidavits on causation by Dr. Barry M. Singer. Their wording is virtually identical. Dr. Singer's affidavits were accompanied by 282 "affidavits" by individual veteran plaintiffs. The latter are form statements, signed by either the plaintiff or his attorney, or both. A representative set of statements is attached at Appendix "A" to this opinion.

The forms typically allege that the plaintiff "saw spraying of Agent Orange, entered defoliated areas and consumed local food and water." The forms then describe the plaintiff's diagnosed medical problems and refer to an attached "checklist" for a description of alleged Agent Orange related symptoms.

The checklists allow the individual to identify any or all of a number of symptoms which they attribute to their exposure to Agent Orange in Vietnam. In addition to general symptoms such as fatigue, space is provided in which to indicate specific skin, skeletal-muscular, gastro-intestinal, visual and behavioral disorders, as well as to identify any tumors as malignant or nonmalignant. Finally, the checklist asks for information about the individual's offspring. A perusal of the checklists reveals that plaintiffs believe they suffer most frequently from "behavioral" disorders:

memory loss, increased irritability, anger and anxiety, insomnia, confusion, depression, and tremors.

The final part of the form affidavits describes the individual's medical history, and asks for a description of tobacco, alcohol, and drug use. This portion also alleges no exposure to any toxic chemical besides Agent Orange.

Dr. Singer, who is board certified in internal medicine, hematology, and oncology, reaches a number of conclusions based on his review of the numerous form affidavits with their attached checklists. He bases his opinion on his medical background, a review of the literature on the biomedical effects of Agent Orange, and an examination of the individual affidavits. He apparently did not examine any medical records or any plaintiffs. In discussing his conclusions, the numbers from his two separate affidavits will be combined.

Dr. Singer notes at the outset that 2,4-D, 2,4,5-T, and 2,3,7,8-tetrachlorodibenzo-p-dioxin ("dioxin") "are potent and toxic agents *capable of inducing* a wide variety of adverse effects both in animals and in man." Singer Aff. ¶ 5 (emphasis supplied). *See also In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. at 778 (dioxin one of most powerful poisons known). Dr. Singer then analyzes the various ailments suffered by the individual affiants.

Fifty-four plaintiffs, Dr. Singer reports, suffer from some form of hepatic (liver) abnormality, either abnormal liver function tests, hepatitis, cirrhosis of the liver, or pericentral steatosis. He notes that liver disorders have been reported to develop in humans after industrial exposure and accidents, and in dogs, rats, mice, and primates after subacute and chronic exposure. For example, "[i]n both mice and rats, small doses of TCDD predictably produce an increase in liver weight." Aff. ¶ 6.

Dr. Singer also asserts that 2,4,5-T "produces liver enzyme abnormalities * * * liver swelling and centrilobular necrosis" (death of a central liver lobule, or functional unit of the liver), and that one plaintiff suffered from a bile duct microadenoma (small, usually benign tumor in the passage between the liver and gall bladder) and from fatty metamorphosis of the liver. He concludes that "these compounds *are capable of producing* marked alteration in hepatic architecture and function" and that the liver abnormalities plaintiffs allege are *"consistent with"* the known effects of polychlorinated herbicides. (Emphasis supplied.) Although Dr. Singer does not reveal the studies that he relies upon to reach this conclusion, it is clear he is not referring to studies that analyze the effects of Agent Orange on exposed veterans. In any event, the liver disorders Dr. Singer finds in the animal and industrial studies differ substantially from those plaintiffs report they suffered.

Dr. Singer next notes that many affiants suffer from asthenic (exhausting) symptoms: "[f]atigue was present in [211] patients, numbness of the extremities in [206], tremor in [144] and depression in [219] [and] [228] patients complained of increased irritability, increased anger was present in [215], increased anxiety in [219], sleep disturbances in [188], increased aggression in [167], and confusion in [149] patients." Aff. ¶ 7. He notes that such neurological effects have been reported to result from industrial accidents and testing in animal models, again without naming his sources or specifying what quanity of 2,4,5-T was involved. He concludes that many neurological symptoms complained of by the plaintiffs are "clearly *compatible with"* the known effects of dioxin on the human nervous system. (Emphasis supplied.)

Dr. Singer next discusses the affiants complaining of weight loss (57), decreased appetite (88), and gastrointes-

tinal disturbances (178). He asserts that nausea, vomiting, diarrhea, and abdominal pain have been reported after industrial exposure to polychlorinated herbicides; he adds that TCDD produces weight loss in primates, rodents, and fowl. Dr. Singer thus concludes that the affiants' symptoms are *"compatible with* known biological effects of polychlorinated herbicides." (Emphasis supplied.)

Similarly, unnamed studies of rats and primates convince him that the decreased reproductive capacity claimed by nine plaintiffs *"would be compatible with* known effects of polychlorinated herbicides." Aff. ¶ 12 (emphasis supplied).

Sixteen of the plaintiffs allege that they suffer from some form of cancer, including Hodgkin's Disease. Dr. Singer cites animal and industrial exposure studies that conclude that exposure to TCDD leads to cancer of the hard palate and the stomach, and increases the incidence of sarcomas and lymphomas. He also refers to a study allegedly conducted in North Vietnam between 1962 and 1968 which found an increased incidence of liver cancer, although he does not mention in which segment of the population. *Cf.* Frank, 13A *Courtroom Medine,* § 24.30 at 24-12 ("[h]ematologic malignancies have been reported with pesticide exposure, but, since there have been no population-based studies, *a cause-and-effect relationship cannot be proven* at this time.") (emphasis supplied). Based on these studies, Dr. Singer asserts that polychlorinated herbicides "would represent *potential* causative factors in the tumors claimed by the affiants." Aff. ¶ 10 (emphasis supplied).

Dr. Singer next turns to what may be broadly described as plaintiffs' dermatological difficulties: hair loss (93), rash (226), acne (105), and other skin problems such as

peeling, hypopigmentation, and photosensitivity (211). Only two plaintiffs specifically mention chloracne, but Dr. Singer warns that it may be confused with acne without a careful physical examination. Mammals exposed to TCDD, Dr. Singer notes, have developed alopecia (baldness) and contact dermatitis (inflammation of the skin caused by allergy to a substance). Dr. Singer concludes: "Thus polychlorinated herbicide exposure *may well constitute a cause of* the dermalogic difficulties complained of by plaintiffs." (Emphasis suppied.)

Dr. Singer's final analysis focuses on 324 complaints of chronic sore throat, lymphadenopathy (simple enlargement of the lymph nodes) sinus congestion and inflammation. Dr. Singer attributes these problems to Agent Orange exposure. Animal studies have shown, he states, that polychlorinated herbicides may induce "thymic atrophy" in animals. *Cf.* J.E. Schmidt, 1-2 *Attorneys' Dictionary of Medicine,* at A-298 & T-52 (atrophy, a wasting away, is usually due to defective nutrition; the thymus may be a land of internal secretion but its function is not understood). He also relies on animal studies finding a number of alterations in the immune system after exposure to TCDD: phytohemagghetining transformation of spleen cells, decline in serum globulin concentrations, increased sensitivity to bacterial endotoxins, depressed T-cell rosette formation, and delayed hypersensitivity. Although he does not reveal the dosage of TCDD involved in creating these aberrations in the functioning of the immune system, he concludes that they "*could be a contributing* factor in the infectious symptoms experienced by some of the plaintiffs." (Emphasis supplied.)

As a review of Dr. Singer's affidavit reveals, he attributes some 37 separate diseases, disorders, and symp-

toms – including baldness and diarrhea – to exposure to Agent Orange. He mentions only two doubtful examples of chloracne and none of porphyria cutanea tarda, the two afflictions Congress considered worthy of a statutory presumption of service connection, although not without reservations. *See* House Report, *supra, reprinted in* 1984 U.S.C.Code Cong. & Admin.News 4449, at 4453 (insufficient credible scientific evidence" that veterans exposed to Agent Orange suffer increased adverse health effects).

Stripped of its verbiage, Dr. Singer summarizes his overall conclusion by stating that *if* the affiants are telling the truth and *if* there is no cause for their complaints other than Agent Orange, then Agent Orange must have caused their problems. Dr. Singer states:

> *Assuming the truth of the affidavits* submitted, *and absent any evidence of pre-existing, intervening, or superseding cause for the symptoms and diseases* complained of in these affidavits, it is my opinion to a reasonable degree of medical probability (that is, more likely than not) that the medical difficulties described by the affiants were proximately caused by exposure to Agent Orange.

(Emphasis supplied.).

Put differently, Dr. Singer's analysis amounts to this: the affiants complain of various medical problems; animals and workers exposed to extensive dosages of TCDD have suffered from related difficulties; therefore, assuming nothing else caused the affiants' afflictions, Agent Orange caused them. One need hardly be a doctor of medicine to make the statement that if X is a possible cause of Y, and if there is no other possible cause of Y, X must have caused Y. Dr. Singer's formulation avoids the

problem before us: which of myraid possible causes of Y created a particular veteran's problems. To take just one of the diseases reported by plaintiffs in an undifferentiated form, and relied upon by Dr. Singer, hepatitis: this is a disease common in the civilian population and there is not the slightest evidence that its incidence is greater among those exposed to Agent Orange than those not exposed. *See, e.g.,* J.E. Schmidt, 1 *Attorney's Dictionary of Medicine* H36-37 (1977) (listing various forms). It may well be that hepatitis among Vietnam veterans is greater than among those who did not serve there because of greater incidence of this problem in Vietnam resulting from drug abuse and generally unsanitary conditions. There is no showing that among Vietnam veterans the incidence of hepatitis is greater in those exposed to Agent Orange.

As section IV.A.3 will show, Dr. Singer's conclusory allegations lack any foundation in fact. His analysis, in addition to being speculative, is so guarded as to be worthless.

2. *Dr. Epstein's Affidavits*

Plaintiffs belatedly submitted affidavits by Dr. Samuel S. Epstein. He has been specially trained in the fields of pathology, bacteriology, and public health. He is currently Professor of Occupational and Environmental Medicine at Univesity of Illinois Medical Center in Chicago. Among his 239 publications are a number of articles on the effects of exposure to 2,3,7,8-tetrachlorodibenzo-paradioxin ("TCDD"). His credentials clearly suffice to qualify him as an expert pursuant to Rule 702 of the Federal Rules of Evidence.

Dr. Epstein submitted a general or master affidavit on

the scientific literature on causation. This 65-page affidavit is substantially identical to an earlier brief submitted by plaintiffs dated September 18, 1984 in opposition to the motion for summary judgment – some time before Dr. Epstein was retained on February 27, 1985. Dep. of Dr. Epstein at 14 (April 11, 1985). An extensive deposition of Dr. Epstein dated April 11, 1985 adds nothing of a substantive nature to the affidavit, but consists of a devastatingly successful showing of his lack of knowledge of the medical and other background of those on whose behalf he submitted affidavits.

Just as in plaintiffs' brief, Dr. Epstein reviews over one hundred epidemiological studies of the effects of TCDD on animals and on humans as a result of industrial accidents. These studies were submitted to the court and have been made a part of the record in the multidistrict litigation. They were discussed orally on the record during argument of the motion and rejected as virtually useless in establishing causation.

Dr. Epstein also relies on affidavits by Doctors Carnow, Silbergeld, and Singer which were separately submitted in the "opt-out" cases. None of these affidavits are helpful in supporting causation. Dr. Epstein concludes that "a causal relationship exists between exposure to Agent Orange and a wide range of toxic multi-system and multi-organ effects." Aff. at 63.

The court has reviewed these and other like studies dealing with animal laboratory studies, industrial accidents, and other products. They suggeset that dixoin *may cause* diseases in animals, including man. They are not correlated to those exposed to Agent Orange in Vietnam. At most, they collectively have the probative force of a scintilla of evidence.

Dr. Epstein also submitted fifteen individual affidavits of causation. In reaching conclusions with respect to the individual plaintiffs, he says that he generally relied upon their military service records, Veterans Administration medical records, and interview questionnaires, symptomology checklists, and affidavits completed by plaintiffs. *See* Attachments to Dr. Epstein's Deposition submitted as Appendix A to Defendants' Supplemental Memorandum in Opposition to Plaintiffs' Motion for Partial Summary Judgment and Reply Memorandum in Further Support of Defendants' Motion to Dismiss and/or for Summary Judgment, Dep. at 474 ff. Each affiant-plaintiff states in general terms that he was exposed to Agent Orange.

Each of the fifteen plaintiffs described by Dr. Epstein reports that he suffers from a number of diseases and has varying family histories and personal habits as follows: cancer of the ileum (family history of cancer; 1½ packs of cigarettes per day); Hodgkin's Disese, coronary artery disease, cavernous angioma of the brain, bile duct microadenoma (no family history; infrequent smoker); chloracne, infertility (no family history; nonsmoker); brain cancer (family history of lung cancer; nonsmoker (now deceased)); malignant astrocytoma of the brain (no family history; smokes two packs of cigarettes per day); chronic hepatitis (no family history; one pack of cigarettes per day; moderate drinker); chloracne (no family history; two packs of cigarettes per day; moderate drinker, possible exposure to toxic substances at a sewage plant); squamous and basal cell carcinomas of the lip (no family history; cigarette smoker; alcohol consumption unknown); chronic hepatitis and child with multiple birth defects (no family history; current nondrinker with history of alcohol abuse); chloracne (no family history); chloracne (no family history; nonsmoker); carcinoma of the bladder (no family history; nonsmoker); cancer of the colon (nonsmoker).

In sum, Dr. Epstein attributes some fourteen different diseases and afflictions to exposure to Agent Orange of fifteen plaintiffs. Dr. Epstein's affidavits, even if considered timely, are insufficient to oppose the motion for summary judgment. All the diseases in the cases he relies upon are found in the general population of those who were never exposed to Agent Orange. There is no showing that the incidence of the diseases relied upon are greater in the Agent Orange-exposed population than in the population generally. It must be borne in mind that these are fifteen cases not taken at random but deliberately selected because of their claims from a population of 2,600,000 who served in Vietnam.

IV. LAW

A. *Legal Standards Governing Expert Opinion*

In determining whether an expert opinion is sufficient to withstand a summary judgment motion, courts undertake a detailed inquiry into the admissibility of the proffered testimony. In a case such as the one before us, Rules 102, 104(a), 401-403, 702-703 and 803(18) of the Federal Rules of Evidence control the inquiry. *See* Fed.R.Ev. 101; *Weit v. Continental Illinois National Bank and Trust Co.,* 641 F.2d 457, 467 n. 38 (7th Cir.1981) (Rules of Evidence apply to summary judgment motions), *cert. denied,* 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982). Rule 104(a) of the Federal Rules of Evidence requires a court to make a preliminary inquiry into the admissibility of expert testimony. *See In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238, 260 (3d Cir.1983) (*in limine* rulings on admissibility appropriate even when not required by Rule 104), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985). The

preponderance of the evidence standard generally governs in such a determination. *Cf. Lego v. Twomey,* 404 U.S. 477, 484, 489, 92 S.Ct. 619, 624, 626, 30 L.Ed.2d 618 (1972).

1. *Admissibility of Epidemiological Studies*

In a mass tort case such as Agent Orange, epidemiological studies on causation assume a role of critial importance. *Cf. In re Swine Flu Immunization Products Liability Litigation,* 508 F.Supp. 897, 907 (D.Colo.1981) ("[w]here * * * the exact organic cause of a disease cannot be scientifically isolated, epidemiologic data becomes highly persuasive."), *aff'd sub nom. Lima v. United States,* 708 F.2d 502 (10th Cir.1983). Confronted with the reality of mass tort litigation, courts have been forced to abandon their traditional reluctance to rely upon epidemiological studies. Dore, "A Commentary on the Use of Epidemiological Evidence in Demonstrating Cause-in-Fact," 7 Harv.Envtl.L.Rev. 429 (1983).

Commentators have approved the growing judicial reliance on such scientific evidence. *See, e.g.,* Black & Lilienfeld, "Epidemiological Proof in Toxic Tort Litigation," 52 Ford.L.Rev. 732 (1984); Symposium on Science and the Rules of Evidence, 99 F.R.D. 187 (1983); Gianelli, "The Admissibility of Novel Scientific Evidence: *Frye v. United States,* a Half-Centry Later," 80 Colum.L.Rev. 1197 (1980); Korn, "Law, Fact, and Science in the Courts," 66 Colum.L.Rev. 1080 (1966).

One vehicle for the admissibility of such studies has been Federal Rule of Evidence 803(8), the public records and reports exception to the hearsay rule. This exception is based based upon our experience that public officials who are scientists generally perform their duties accurately and faithfully. Grant, "The Trustworthiness Standard for the

Public Records and Reports Hearsay Exception," 12 W. State U.L.Rev. 53, 56 (1984); *see also In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238, 265 (3d Cir.1983) ("reports of investigations are presumed to be reliable."), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985). Subsection (8)(C) of the rule allows as evidence "factual findings resulting from an investigation made pursuant to authority granted by law, unless the sources of information or other circumstances indicate lack of trustworthiness." *See City of New York v. Pullman, Inc.,* 662 F.2d 910, 914 (2d Cir.1981) (discretion of trial court emphasized), *cert. denied,* 454 U.S. 1164, 102 S.Ct. 1038, 71 L.Ed.2d 320 (1982).

A number of courts have found epidemiological studies conducted by the government sufficiently trustworthy. The Fourth Circuit recently held admissible under Rule 803(8) (C) epidemiological studies of toxic shock syndrome conducted by the Federal Centers for Disease Control and three state health departments. *Ellis v. International Playtex, Inc.,* 745 F.2d 292 (4th Cir. 1984). The court noted that CDC and the state health departments used "uniform procedures and methods that are widely accepted by their peers" and carried out the studies in a timely and impartial manner. *Id.* at 301.

Plaintiffs have failed to show, under Rule 803(8)(C), that the various state and national studies averted to above were flawed. *See also Kehm v. Procter & Gamble Mfg. Co.,* 724 F.2d 613, 617-20 (8th Cir.1983) (affirming admissibility of CDC and state studies showing link between use of tampons and incidence of toxic shock syndrome; studies were timely, conducted in skillful manner and no motive probative of untrustworthiness present).

CDC epidemiological studies have been heavily relied upon in the swine flu cases. *See, e.g., In re Swine Flu Immunization Products Liability Litigation,* 508 F.Supp. 897, 907 (D.Colo.1981), *aff'd sub nom. Lima v. United States,* 708 F.2d 502 (10th Cir.1983); *see also Cook v. United States,* 545 F.Supp. 306 (N.D.Cal.1982); *Migliorini v. United States,* 521 F.Supp. 1210, 1218 (M.D.Fla.1981); *Heyman v. United States,* 506 F.Supp. 1145 (S.D.Fla.1981); *cf. Reyes v. Wyeth Laboratories,* 498 F.2d 1264, 1270 n. 1 (5th Cir.) (CDC studies admitted to show incidence of polio), *cert. denied,* 419 U.S. 1096, 95 S.Ct. 687, 42 L.Ed.2d 688 (1974).

In the Agent Orange litigation, the federal, state, and Australian government studies discussed above are on file having been subject to the court's judicial notice. *In re "Agent Orange" Product Libility Litigation,* 603 F.Supp. 239, 246 (E.D.N.Y.1985). These studies are reliable, and would be admited under Rule 803(8)(C). *Ellis v. International Playtex, Inc.,* 745 F.2d 292 (4th Cir.1984). *See also* Black & Lilienfeld, "Epidemiologic Proof in Toxic Tort Litigation," 52 Ford.L.Rev. 732 (1984). Plaintiffs have made no objections to their admissibility and in fact rely specifically on the Ranch Hand Study in supporting their case for causation. *See* Tr. at 44 (Hearings on April 15, 1985).

The fact that the federal government was a defendant in related *Agent Orange* cases does not suggest a motive for untrustworthiness by the independent government scientists who conducted the studies. The *Swine Flu* cases cited *supra* found no such motive even though there the government was the defendant. *Compare United States v. Esle,* 743 F.2d 1465, 1474 (11th Cir.1984) (affirming exclusion of market surveys where radio stations

conducting them had motive to exaggerate number of Hispanic listeners). These epidemiological studies alone demonstrate that on the basis of present knowledge, there is no question of fact: Agent Orange cannot now be shown to have caused plaintiffs' numerous illnesses.

The parties, and especially plaintiffs, rely on over one hundred epidemiological studies not conducted by government officials and as such not subject to the 803(8)(C) exception. Such privately conducted studies may be admissible as learned articles under Rule 803(17) and some of them would qualify under Rule 803(6) and other exceptions to the hearsay rule. At trials, they are commonly analyzed under Rule 703 as a basis for expert opinion rather than as independently admissible. Cf. *In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238, 275-84 (3rd Cir.1983) (discussing admissiblity of privately conducted economic reports under Rules 702-703), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985).

Were they relevant, almost all of these privately conducted studies would meet the test of a variety of the above hearsay exceptions, including Rules 803(24) and 80(45) (catchall exceptions based on need and general reliability). There is no need at this point to analyze them individually. Most of the studies rely on inapposite data and would be excluded under Rules 401 to 403. Some of them on industrial exposure have been recognized as flawed. *See, e.g., Palmer v. Nova Scotia Forest Industries* 60 N.S.R. (2d) 271, 352-53, 2 D.L.R. (4th) 397 (S.Ct. Nova Scotia, 1983) (Nunn, J.) (refusing to enter injunction against spraying of 2-4-D, 2,4,5-T-phenoxy herbicides in part because expert studies, such as Hardell's, showing alleged adverse health effects were widely recognized as flawed).

The many studies on animal exposure to Agent Orange, even plaintiffs' expert concedes, are not persuasive in this lawsuit. In a jointly-authored article, Dr. Ellen K. Silbergeld writes that "laboratory animal studies * * * are generally viewed with more suspicion than epidemiological studies, because they require making the assumption that chemicals behave similarly in different species." Hall & Silbergeld, "Reappraising Epidemiology: A Response to Mr. Dore," 7 Harv.Envtl.L.R ev. 441, 442-43 (1983). Dr. Silbergeld further notes that "[a]nimal studies are aimed at discovering a dose-response relationship, while epidemiological studies show an association between exposure and disease." *Id.* at 443 n.18.

There is no evidence that plaintiffs were exposed to the far higher concentrations involved in both the animal and industrial exposure studies. *Cf. In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 782 (E.D.N.Y.1984). The animal studies are not helpful in the instant case because they involve different biological species. They are of so little probative force and are so potentially misleading as to be inadmissible. *See* Fed.R.Ev. 401-403. They cannot be an acceptable predicate for an opinion under Rule 703. *See In re "Agent Orange" Product Liability Litigation,* 603 F.Supp. 239, 247 (E.D.N.Y.1985).

2. *Admissibility of Expert Opinion Under Rule 702*

Rule 702 of the Federal Rules of Evidence provides for opinion testimony by experts "if scientific technical or other specialized knowledge will assist the trier of fact to determine a fact in issue" and the witness is "qualified as an expert by knowledge, experience, training or education." The court must first determine whether the expert is sufficiently qualified in his or her field to be

allowed to testify. *Frazier v. Continental Oil Co.,* 568 F.2d 378, 383 (5th Cir.1978). The court must also determine whether the proffered evidence would be helpful to the trier of fact, although doubts should be resolved in favor of admissibility. *In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238, 279 (3d Cir.1983), *cert. granted,* ____ U.S.____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985); *see also Kline v. Ford Motor Co., Inc.,* 523 F.2d 1067, 1070 (9th Cir.1975) (within discretrion of trial judge to determine whether expert opinion on causal connection between defects in steering column and auto accident was helpful).

Until recently the assumption of the Federal Rules favoring admissibility was sometimes applied with less force in cases involving novel scientific evidence. *Cf.* Rule 102 of Federal Rules of Evidence. Once governed by the *Frye* test of general acceptance in the relevant scientific community, *Frye v. United States,* 293 F. 1013 (D.C.Cir. 1923), the assessment of novel testimony now involves a balancing of the relevance, reliability, and helpfulness of the evidence against the likelihood of waste of time, confusion and prejudice. *United States v. Downing, 753 F.2d 1224 (3d Cir. 1985); United States v. Williams,* 583 F.2d 1194, 1198 (2d Cir.1978), *cert. denied,* 439 U.S. 1117, 99 S.Ct. 1025, 59 L.Ed.2d 77 (1979). *But cf.* Note, "Expert Testimony Based on Novel Scientific Techniques: Admissibility Under the Federal Rules of Evidence," 48 Geo. Wash.L.Rev. 774 (1980) (arguing that a modified *Frye* test is preferable to balancing adopted in *Williams*).

Courts abandoning *Frye* stress Ruie 702's liberal attitude towards the admissibility of relevant expert testimony whenever it would be helpful to the trier. When either the expert's qualifications or his testimony lie at the

periphery of what the scientific community considers acceptable, special care should be exercised in evaluating the reliability and probative worth of the proferred testimony under Rules 703 and 403. *See Downing supra,* 753 F.2d at 1239 (qualifications and professional stature of expert as well as non-judicial uses to which the scientific technqiue is put may constitute circumstantial evidence of the technique's reliability); *cf.* Huber, "Safety and the Second Best: The Hazards of Public Risk Management in the Courts," 85 Colum.L.Rev. 277, 333 (1985) ("a Ph.D. can be found to swear to almost any 'expert' proposition, no matter how false or foolish"); Donaher, Piehler, Twerski & Weinstein, "The Technological Expert in Products Liability Litigation," 52 Texas L. Rev. 1303, 1311-12 (1974).

(a) *Admissibility of Dr. Singer's Testimony*

(i) *Qualifications as an Expert.* Federal Rule 702 embodies a liberal policy towards qualification as an expert. The court makes the determination based on the witness' actual qualifications and knowledge of the subject matter and not his title. *Mannino v. International Manufacturing Co.,* 650 F.2d 846, 851 (6th Cir. 1981). Thus, it is not determinative that Dr. Singer is not an epidemiologist.

It is disturbing that Dr. Singer has shown no great interest in the subject of critical importance in this case. He does not belong to any epidemiological societies. *Cf. Kubs v. United States,* 537 F.Supp. 560, 562 (E.D.Wis. 1982) (peer review important). Apparently his only publication after eighteen years of practice is a co-authored article addressing leukemia therapy – a subject far removed from the population-based studies Dr. Singer purports to rely upon in his affidavit. *See* Black and

Lilienfeld, *supra,* at 775 (arguing that a medical doctor should be allowed to testify on toxic tort causation "only if he could demonstrate knowledge of epidemiology."). He does, nevertheless, have a distinguished record as practitioner and teacher. In keeping with the spirit of rule 702, Dr. Singer will be considered an expert although obviously he would not be held in the same esteem on the critical issue of causation and the effects of toxic substances as Dr. Epstein or some of the other experts relied upon by plaintiffs and defendants.

(ii) *Helpfulness.* Dr. Singer's testimony addresses one of the most hotly contested issues in the protracted Agent Orange litigation – causation – and would therefore assist the trier of fact. *Breidor v. Sears, Roebuck and Co.,* 722 F.2d 1134, 1139 (3d Cir.1983). His general scientific technique consists of making an inference from epidemiologic data and animal studies that the particular plaintiff considered by him suffers from an affliction causally connected to Agent Orange exposure. This technique has been accepted by a sufficient number of courts to allow judicial notice to be taken of its general acceptance. *See* Federal Rules of Evidence, Rule 201; *United States v. Downing,* 753 F.2d 1224, 1237 (3d Cir.1985). The method of drawing inferences employed by Dr. Singer could withstand the flexible approach to Rule 702 admissibility followed in the Second and Third Circuits. *See Downing, supra,* at 1240; *United States v. Willaims,* 583 F.2d 1194 (2d Cir.1978), *cert. denied,* 439 U.S. 1117, 99 S.Ct. 1025, 59 L.ED.2d 77 (1979). Acceptability of the scientific technique under Rule 702 does not, as indicated *infra,* assure the testimony's compliance with the requirements of Rules 703 and 401 to 403.

(b) *Admissibility of Dr. Epstein's Testimony*

Ample authority exists for refusing to consider the untimely affidavits of Dr. Epstein. *See, e.g., Tabatchnick v. G.D. Searle & Co.*, 67 F.R.D. 49, 55 (D.N.J. 1975); *cf. Marx & Co., Inc. v. Diners' Club, Inc.*, 550 F.2d 505, 508 n. 9 (2d Cir.) (prejudicial effect of inadmissible testimony heightened by its untimley and surprise nature), *cert. denied*, 434 U.S. 861, 98 S.Ct. 188, 54 L.Ed.2d 134 (1977). Nevertheless, the court has considered it in deference to the policy of deciding cases on the merits where that is possible. *See* Fed.R.Civ.Pro. 1.

Dr. Epstein's affidavits and deposition demonstrate that his testimony would meet the standards of Rule 702. He is clearly a highly qualified expert in the field, his testimony meets the helpfulness requirement, and his analytical technique — inference from epidemiological data and medical records — is acceptable. Just as in the case of Dr. Singer's testimony, however, compliance with Rule 702 does not guarantee admissibility under Rules 703 and 403.

3. *Rule 703*

Rule 703 of the Federal Rules of Evidence attempts to delimit the bases upon which an expert may rely in testifying to those "reasonably relied" upon "by experts in the field." It provides:

> The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to him at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.

Neither Dr. Singer nor Dr. Epstein based his conclusions on observations. *But cf.* Dep. of Dr. Epstein at 16 ("I had some conversations with the clients" – none of whom is apparently involved in the opt-out cases now before the court); documents at Dep. 474 ff. Rather, each one relied almost wholly upon the specific anecdotal written information supplied by the plaintiffs and upon general studies and literature.

The trial court must decide whether this data is of a type reasonably relied upon by experts in the field. Rule 104(a). Federal Rules of Evidence. *See State v. Rolls,* 389 A.2d 824, 829-30 (Me.1978) (relying on Federal Rule of Evidence 703 to interpret Maine's equivalent Rule).

Courts have adopted two general approaches to Rule 703: one restrictive, one liberal. Arnolds, "Federal Rule of Evidence 703: The Back Door is Wide Open," 20 *The Forum: Tort and Insurance Practice Section, American Bar Association* 1, 7 (Fall 1984). The more restrictive view requires the trial court to determine not only whether the data are of a type reasonably relied upon by experts in the field, but also whether the underlying data are untrustworthy for hearsay or other reasons. The more liberal view, best represented by *In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238 (3d Cir. 1983), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985), allows the expert to base an opinion on data of the type reasonably relied upon by experts in the field without separately determining the trustworthiness of the particular data involved. *Arnolds, supra,* at 7.

Although the Second Circuit has not squarely addressed this issue, there is some indication that it would adopt a narrower view than that espoused by the Third Circuit. In

Shatkin v. McDonnell Douglas Corp., 727 F.2d 202 (2d Cir.1984), the panel alluded to a trial court's "discretionary right under Fed.R.Evid. 703 to determine whether the expert acted reasonably in making assumptions of fact upon which he would base his testimony," *id.* at 208, and cited with apparent approval the restrictive approach outlined in *Zenith Radio Corp. v. Matsushita Electric Industrial Co., Ltd.,* 505 F.Supp. 1313 (E.D.Pa.1981), before it was affirmed in part and reversed in part *sub nom. In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238 (3d Cir.1983), *cert. granted,* ____U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985). The *Zenith Radio* trial court had developed its own set of standards for determining reasonable reliance, but the Court of Appeals for the Third Circuit found these standards too restrictive.

In reversing, the Third Circuit found the trial court had erred in ignoring the "unequivocal and uncontradicted affidavits" from the experts that the materials they had relied upon were of a type reasonably relied upon by experts in their respective fields. 723 F.2d at 276. The trial court, the Court of Appeals appropriately noted, must make a factual inquiry under Federal Rule of Evidence 104(a) to determine what data experts find reliable. The district court should not, however, have substituted its own views of "reasonable reliance" for those of the experts. *Id.* at 277.

Even assuming the Second Circuit would agree with the more permissive approach of the Court of Appeals in *Japanese Electronic Products,* the Third Circuit did not dispute that " 'the assumptions which form the basis for the expert's opinion, as well as the conclusions drawn therefrom, are subject to rigorous examination.' " *Id. (quoting Zenith,* 505 F.Supp. at 1328). *See also Wilder Enterprises,*

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Inc. v. Allied Artist Pictures Corp., 632 F.2d 1135, 1143-44 (4th Cir.1980) (expert's testimony properly excluded under Rule 703 where no facts presented to support his calculations nor any proof that underlying data was of a type reasonably relied upon by experts in the field); Carlson, "Collision Course in Expert Testimony: Limitations on Affirmative Introduction of Underlying Data," 36 U.Fla.L.Rev. 234, 240-41 & n. 26 (1984) (trial court tests appropriateness of expert's reliance upon out-of-court data). "Rigorous examination" is especially important in the mass toxic tort context where presentation to the trier of theories of causation depends almost entirely on expert testimony.

"Though courts have afforded experts a wide latitude in picking and choosing the sources on which to base opinions, Rule 703 nonetheless requires courts to examine the reliability of those sources." *Soden v. Freightliner Corp.*, 714 F.2d 498, 505 (5th Cir.1983). The trial court's examination of reasonable reliance by experts in the field requires at least that the expert base his or her opinion on sufficient factual data, not rely on hearsay deemed unreliable by other experts in the field, and assert conclusions with sufficient certainty to be useful given applicable burdens of proof. Courts must undertake this inquiry while taking care not to infringe upon the fact-finder's role of assessing the weight of the expert testimony. *Poller v. Columbia Broadcasting System, Inc.*, 368 U.S. 464, 473, 82 S.Ct. 486, 491, 7 L.Ed.2d 458 (1962).

(a) *Reliance on Inadmissible Evidence*

Rule 703 permits experts to rely upon hearsay. The guarantee of trustworthiness is that it be of the kind normally employed by experts in the field. The expert is as-

sumed, if he meets the test of Rule 702, to have the skill to properly evaluate the hearsay, giving it probative force appropriate to the circumstances. Nevertheless, the court may not abdicate its independent responsibilities to decide if the bases meet minimum standards of reliability as a condition of admissibility. *See* Fed.R.Ev. 104(a). If the underlying data are so lacking in probative force and reliability that no reasonable expert could base an opinion on them, an opinion which rests entirely upon them must be excluded. Fed.R.Ev. 401, 402. The jury will not be permitted to be misled by the glitter of an expert's accomplishments outside the courtroom. Fed.R.Ev. 403; *see also, e.g., United States v. Esle,* 743 F.2d 1465, 1474 (11th Cir.1984) (expert opinion based on untrustworthy market surveys); *Barrel of Fun, Inc. v. State Farm Fire & Casualty Co.,* 739 F.2d 1028, 1033 (5th Cir.1984) (unreasonable for expert to rely upon voice stress analysis); *United States v. Cox,* 696 F.2d 1294, 1297 (11th Cir.) (affirming exclusion of expert testimony that was based on hearsay knowledge of historical events not reasonably relied upon by experts in the field), *cert. denied,* ____ U.S. ____, 104 S.Ct. 99, 78 L.Ed.2d 104 (1983); *Soden v. Freightliner Corp.,* 714 F.2d 498, 503-06 (5th Cir.1983) (exclusion of expert opinion based on unreliable accident statistics); *Dallas & Mavis Forwarding Co., Inc. v. Stegall,* 659 F.2d 721, 722 (6th Cir.1981) (testimony of state trooper offered as an expert regarding cause of accident based on story of biased eye witness "the sort of hearsay testimony" Rule 703 meant to foreclose); *Toys "R" Us, Inc. v. Canarsie Kiddie Shop, Inc.,* 559 F.Supp. 1189, 1205 (E.D.N.Y.1983) (excluding expert opinion based on surveys lacking "sufficient indicia of trustworthiness" under Rule 703).

In *In re Swine Flu Immunization Products Liability Litigation,* 508 F.Supp. 897 (D.Colo.1981), *aff'd sub*

nom. Lima v. United States, 708 F.2d 502 (10th Cir.1983), a case that resembles the one now before the court, the trial judge struck the testimony of one of plaintiff's experts. In formulating his opinion that plaintiff's Guillian-Barre Syndrome ("GBS") was caused by a swine flu vaccination, the doctor had relied on two exhibits. One, compiled by plaintiff's attorney, was a summary of all GBS cases treated in Colorado hospitals from October 1976 until August 1977. The other also reported on GBS cases in Colorado during the same time period, but relied instead on data retrieved from a computer listing, the International Classification of Diseases Adapted. This code listed diseases other than GBS, which the court noted is an extremely difficult disease to diagnose, and medical clerks decide which of the diseases listed actually were GBS. 508 F.Supp. at 903.

The court excluded the doctor's testimony because the underlying data was "based upon hearsay evidence not reasonably relied upon by experts in neurology and epidemiology" and was "of a rudimentary nature." *Id.* at 904. Although the doctor himself claimed that epidemiologists would rely on information of the type gathered by the medical clerks, two other experts disagreed. They stated that the medical clerks were incapable of judging which of the listed diseases were in fact GBS and so had overstated the incidence of the disease.

O'Gee v. Dobbs Houses, Inc., 570 F.2d 1084 (2d Cir.1978), is not to the contrary. There, the court affirmed the admissiblity of testimony by a physician retained for the litigation who had seen plaintiff more than four years after her accident. The physician was allowed to testify not only to what plaintiff had told him about her injuries, but also to what she had told him about her prior physician's conclusions. The physician stated, however, that he was

relying not on plaintiff's statements alone; he had before him the reports of at least two of the prior treating physicians and the hospital records. The Second Circuit found no abuse of discretion in admitting the physician's opinion, but observed:

> [W]hile expert witnesses are to be permitted to explain the basis of their opinions, we do not here decide that that leeway extends to the kind of multiple hearsay that would have been present here in the absence of the doctors' reports.

Id. at 1089; *see also Slaughter v. Abilene State School,* 561 S.W.2d 789, 791 (Tex. 1977) (doctor's testimony predicated upon both hearsay and personal knowledge admissible); *Smith v. Tennessee Life Insurance Co.,* 618 S.W.2d 829, 832 (Tex.Civ.App.1981) ("report of private investigators is not * * * the type of hearsay data that a doctor can rely upon in forming his expert opinion").

Reliance on patient statements to render a medical opinion is usually justified as trustworthy because patients have a strong incentive to tell their treating physician the truth — the desire to recover. Rheingold, "The Basis of Medical Testimony," 15 Vand.L.Rev. 473, 495 (1962). While this indicia of trustworthiness was absent in the *O'Gee* case, supra, the medical records provided ample corroboration. *Cf. Ferebee v. Chevron Chemical Co.,* 736 F.2d 1529, 1535 (D.C.Cir.) (treating physicians' reliance on test results and physical examination of patient to conclude his illness caused by exposure to paraquat), *cert. denied,* ____ U.S. ____, 105 S.Ct. 545, 83 L.Ed.2d 432 (1984). Necessity is also a consideration in justifying reliance on hearsay to render expert advice. *United States v. Aluminum Co. of America,* 35 F.Supp. 820 (S.D.N.Y. 1940); Maguire & Hahesy, "Requisite Proof of Basis for Expert Opinion," 5 Vand.L.Rev. 432, 446-47 (1952).

(i) *Dr. Singer*

Plaintiffs' checklist and "affidavits," illustrated by Appendix "A" to this opinion, submitted with Dr. Singer's affidavits are not material that experts in this field would reasonably rely upon and so must be excluded under Rule 703. Although the court would usually hold a full Rule 104(a) hearing prior to making such a determination, the unreasonableness of Dr. Singer's affidavits is so blatant that a hearing would be useless. The court takes judicial notice – based on hundreds of trials – that no reputable physician relies on hearsay checklists by litigants to reach a conclusion with respect to the cause of their afflictions. *See United States v. Downing,* 753 F.2d 1224, 1238 n. 18 (3d Cir.1985); *cf. Mannino v. International Manufacturing Co.,* 650 F.2d 846, 853 (6th Cir.1981) (experts often rely on studies, literature and tests in testifying.)

It is significant that none of plaintiffs' experts assert that they normally rely on hearsay checklists such as those in Appendix "A" in reaching conclusions as to the causes of their patients' illnesss. *Compare In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238, 277 (3d Cir.1983), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985). The bald assertion of plaintiffs' counsel that Dr. Singer's affidavit was "based upon the kind of information which any treating or examining physician would require in rendering an opinion" does not suffice. *See* Tr. at 64 (April 15, 1985). Instead, courts look to evidence from experts in the field about the reliability of the materials in question, *In re Japanese Electronic Products, supra,* 723 F.2d at 277, as well as their own experience and common sense.

Here we have statements of problems ranging from baldness to the most serious cancers. It verges on the ab-

surd to use affidavits such as those in Appendix "A" to determine both disease and cause. While courts allow reliance on patient statements, they are based upon a personal history corroborated by medical records, a physical examination and medical tests. *O'Gee v. Dobbs Houses, Inc.*, 570 F.2d 1084 (2d Cir.1978). *See also* Rheingold, "The Basis of Medical Testimony," 15 Vand.L. Rev. 473, 488 (1962).

No case cited by plaintiffs has gone so far as to allow a doctor to rely on such self-serving laypersons' general affidavits and checklists prepared in gross for a complex litigation. The influence of glimmering gold at the end of the litigation is particularly evident in the affidavits signed by plaintiffs' counsel. *See* Appendix "A." These affidavits resemble the compilations ruled inadmissible in the swine flu case discussed earlier. *See In re Swine Flu Immunization Products Liability Litigation*, 508 F.Supp. 897, 903 (D.Colo.1981), *aff'd sub nom. Lima v. United States*, 708 F.2d 502 (10th Cir.1983). There, medical clerks were held unqualified to determine which diseases were actually GBS. Here, plaintiffs and their counsel are even less qualified to determine the nature and cause of their afflictions.

Plaintiffs may argue that Dr. Singer's reliance upon such checklists was necessary in light of the size of this litigation and the number of parties involved. Yet, after six years of litigation, it does not seem too much to expect plaintiff's counsel to have obtained more persuasive medical and other records. In any event, necessity justifies reliance on such blatant hearsay only when "the surroundings" convince the court that the data relied upon is otherwise trustworthy. *United States v. Aluminum Co. of America*, 35 F.Supp. 820, 823 (S.D.N.Y.1940).

Here, the ususal inducement to candor with a physician – the hope of successful treatment or diagnosis – was wholly lacking. *Cf.* Fed.R.Ev. 803(4). Instead, plaintiffs had every incentive to be overinclusive in describing their symptoms, as an examination of one of their checklists makes clear. *See* Appendix "A."

(ii) *Dr. Epstein*

Dr. Epstein's affidavits on individual causation are not as vacuous as are Dr. Singer's. Dr. Epstein, while not a treating physician, purports to rely at least in part on medical and military records to corroborate the extent of plaintiffs' exposure and the nature of their illnesses. *See O'Gee v. Dobbs Houses, Inc.,* 570 F.2d 1084, 1089 (2d Cir.1978); *cf. Johnston v. United States,* 597 F.Supp. 374, 406 (D.Kan.1984) (noting plaintiff's failure to call his treating physicians).

It is significant that no medical records of any of the nearly 300 opt-out plaintiffs have been submitted by plaintiffs. Nor are there any affidavits or letters from any treating or examining physicians. There is nothing from any person who has even seen a plaintiff and observed any medical condition. No scrap of verification of a single plaintiff's claim is supplied by plaintiffs. The only material remotely resembling what would be required was elicited, over plaintiffs' attorney's objection, at Dr. Epstein's deposition. *See, e.g.,* Dep. at 16, 40-41, 76-78, 136, 474 ff; Appendix "B" to Defendants' Supplemental Memorandum in Opposition to Plaintiffs' Motion for Partial Summary Judgment and Reply Memorandum in Further Support of Defendants' Motion to Dismiss and/or for Summary Judgment.

Dr. Epstein relies in the main in the same self-serving

hearsay used by Dr. Singer. In all of the individual affidavits, Dr. Epstein bases his finding of exposure to Agent Orange on such plaintiffs' statement:

> I was exposed to Agent Orange. I was sprayed with Agent Orange. I saw the spraying of Agent Orange. I entered defoliated areas. I consumed local food. I drank local water.

As in the case of the studied failure to support any medical claim, there is no support for exposure: no place, no date, no circumstance is given.

Given the difficulty of determining dose-response relationships in toxic tort situations, *cf. Ferebee v. Chevron Chem. Co.*, 736 F.2d 1529 (D.C.Cir.), *cert. denied*, 5____ U.S. ____, 105 S.Ct. 545, 83 L.Ed.2d 432 (1984); *Allen v. United States*, 588 F.Supp. 247 (D.Utah 1984), the amount and existence of exposure to Agent Orange may be critical under plaintiffs' theory of causation. Claims of exposure without detail cannot suffice. Such analyses as those based on HERBS tapes of spraying missions and personnel locations seem necessary. *See, e.g.*, Analysis of Drs. Stellman referred to in Appendix "J" of Special Master Feinberg's Report to the court dated February 27, 1985. Reference to the Veterans Administration's Agent Orange Registry does not alleviate the hearsay problem since placement in the Registry is based on plaintiffs' complaints, not medical records or results of an examination. Even if the examination is negative, the veteran's name is carried in the Registry. Nor is it dispositive that most or all of these fifteen plaintiffs were field soldiers.

Dr. Epstein also relies on unverified hearsay information regarding plaintiffs' personal habits and possible exposure to toxic substancs other than Agent Orange. How much a plaintiff smokes and whether he has been exposed

to other harmful substances are crucial to the issue of causation.

Dr. Epstein relies on the sparsest medical records in concluding no family history of the disease in question exists for some of the plaintiffs he considers. The fact that a family history is not recorded in such medical records does not show the nonexistence of family history.

Plaintiffs have submitted no evidence that other physicians would rely upon material of this kind in reaching a medical conclusion about causation.

To the extent Dr. Epstein has reviewed plaintiffs' medical records, he relies on them only to show that the disease complained of did not manifest itself prior to service in Vietnam. Temporal sequence is not, of course, the equivalent of causation. We must, as Dr. Epstein concedes, recognize the huge array of carcinogens and other harmful substances other than Agent Orange that people are exposed to — whether in Vietnam or in this country.

Even were we to ignore the deficiencies outlined about, it is a fatal flaw in Dr. Epstein's material, as in Dr. Singer's, that no account is taken of the relative degree of specific health problems of those exposed to Agent Orange as compared with those not exposed. All the studies to date indicate no significant differences.

(b) *The Requirement of "Sufficient Basis"*

Courts excluding expert opinion as not based on data reasonably relied upon in the field often note that the expert's conclusions are speculative or unfounded in fact. This was the approach of Judge Skelly Wright in *Merit Motors, Inc. v. Chrysler Corp.*, 569 F.2d 666 (D.C. Cir.1977), a complex antitrust case. To establish the re-

quisite antitrust injury plaintiffs relied almost exclusively on their expert's report which set forth a theory of "inherent" economic effect. *Id.* at 671. Judge Wright, for the court, approved the trial court's grant of summary judgment, finding that the expert had made "unsupported assumptions about the elasticities of demand in various markets and that he virtually ignore[d] the impact of the dominant forces in the automobile market: General Motors and Ford." *Id.* at 673; *see also Barris v. Bob's Drag Chutes & Safety Equipment, Inc.*, 685 F.2d 94, 101-02 n. 10 (3d Cir.1982) (trial court properly excluded expert testimony as to strength of fibers in harness where no showing that expert relied on facts or data from plaintiff's other expert); *United States v. Various Slot Machines on Guam*, 658 F.2d 697, 700 (9th Cir.1981) (summary judgment appropriate where opposition to motion consisted of expert opinions merely asserting without factual basis that certain slot machines were not gambling machines).

Similarly, in *Pennsylvania Dental Association v. Medical Service Association*, 745 F.2d 248 (3d Cir.1984), *cert. denied*, ____ U.S. ___, 105 S.Ct. 2021, 85 L.Ed.2d 303 (1985), the Third Circuit affirmed the exclusion of an expert's opinion lacking any factual predicate in the record. In attempting to define the relevant market for purposes of establishing an antitrust violation, plaintiffs' expert made a number of conclusory statements not based on any evidence in the record. *Id.* at 261-62 n. 7. The appellate court affirmed under Rule 703 and the *Merit Motors* case, finding the affidavit insufficient to create a material issue of fact.

Instructive is the way courts address the problem of expert opinions insufficiently based on facts in the context of deciding appropriate damages. Thus in *Shu-Tao Lin v. McDonnell Douglas Corp.*, 742 F.2d 45 (2d Cir.1984),the

Second Circuit found that the trial below had been incurably tainted by an expert's "lengthy, extravagant, and non-probative projections of * * * future income." *Id.* at 49. The trial court had undertaken a detailed analysis of the expert opinion in deciding the question of remittitur, concluding that the expert's projection that decedent's income would have vastly increased was based only on "unclear tax records." 574 F.Supp. 1407, 1410 (S.D.N.Y. 1983). Nor did the expert offer any studies or empirical data as a basis for his conclusion about the projected increase. *Id. See also Shatkin v. McDonnell Douglas Corp.,* 727 F.2d 202, 208 (2d Cir.1984) (affirming district court's exclusion of testimony that contained "assumptions and assertions * * * so unrealistic and contradictory as to suggest bad faith" by same expert as testified in *Shu Tao Lin, supra.); Drayton v. Jiffee Chemical Corp.,* 591 F.2d 352, 364 (6th Cir.1978) ("no reasonable person would, in the ordinary affairs of life, act upon the astronomical projections and assumptions made by plaintiffs' experts * * *."); *Scheel v. Conboy,* 551 F.2d 41, 43 (4th Cir.1977) (rejecting unfounded assumptions in expert opinion on future economic loss); *McFarland v. Gregory,* 425 F.2d 443, 448 (2d Cir.1970) (affirming exclusion of expert's testimony where he had no knowledge of property in question and his conclusions were conjectural); *cf. Arkansas State Highway Commission v. Roberts,* 246 Ark. 1216, 441 S.W.2d 808, 811-12 (1969) (expert evidence regarding value of certain condemned land rejected as unfounded in fact).

Experts must ground their opinions on verifiable propositions of fact in commercial cases s well as tort actions. For example, in *DiRose v. PK Management Corp.,* 691 F.2d 628 (2d Cir.1982), *cert. denied,* 461 U.S. 915, 103 S.Ct. 1896, 77 L.Ed.2d 285 (1983), the Second Circuit rejected the testimony of plaintiff's expert on valuation as

"simplistic" and granted a new trial. *Id.* at 631. The court wrote: conclusions that "rest upon conclusory and subjective opinions will not suffice." *Id.* at 632.

Courts are particularly wary of unfounded expert opinion when causation is the issue. In *Tabatchnick v. G.D. Searle & Co.*, 67 F.R.D. 49 (D.N.J.1975), the court refused to allow the testimony of plaintiff's expert that an oral contraceptive caused certain adverse neurological effects. The expert relied in part on the notion that the symptoms stopped when plaintiff discontinued use of the pill, yet the testimoy had been that the symptoms continued for some time. *Id.* at 55. Labelling the expert's opinion a "bare conclusion," the court admonished that careful screening of expert testimony on causation was "especially important when the subject is emotionally charged, as it is here." *Id.; see also Cunningham v. Rendezvous, Inc.*, 699 F.2d 676, 678 (4th Cir.1983) (under Rule 703, expert on cause of ship's sinking properly limited to hypotheses "supported by or consistent with the evidence"); *Horton v. W.T. Grant Co.*, 537 F.2d 1215, 1218 (4th Cir.1976) (affirming refusal to admit expert testimony on whether design defect of television set caused fire where no showing that set expert used to reach conclusions had not been previously tampered with); *Gilbert v. Gulf Oil Corp.*, 175 F.2d 705, 709 (4th Cir.1949) ("expert testimony may not be received unless it appears that the witness is in possession of such facts as would enable him to express a reasonably accurate conclusion as distinguished from guess or conjecture"); *compare Beighler v. Kleppe*, 633 F.2d 531 (9th Cir.1980) (denying summary judgment where accident reconstruction expert's affidavit, which was based on visits to the site, discussions with plaintiffs, and examination of motorcycle involved, unequivocally concluded that defendant's negligence caused accident).

Because the rational basis for rules of evidence requires the rejecting of inadequately supported expert testimony, state courts follow the same practice as federal courts. For example, in *State v. Tyler,* 77 Wash.2d 726, 466 P.2d 120, 137 (1970), *vacated on other grounds,* 408 U.S. 937, 92 S.Ct. 2865, 33 LEd.2d 756 (1972), the Supreme Court of Washington found that the two psychiatrists whose opinion testimony was offered to show lack of criminal intent had no reasonable medical kowledge upon which to base an opinion. The doctors had no knowledge of the quantities, strengths or dosages of cocaine, amphetamines, Dexamyl, marijuana and LSD ingested by defendant or of the intervals in which they were taken. The experts had not examined the accused directly before or after the commission of acts allegedly committed under the drugs' influence. Without any facts on which to base their opinions with reasonable medical certainty, the Supreme Court found that the doctors' testimony had been properly excluded as speculative and argumentative. *See also Brugh v. Peerson,* 183 Neb. 190, 159 N.W.2d 321 (1968) (error to admit the opinion of plaintiff's expert on speed of vehicle because it depended on the resolution of many variables, rested on assumptions and amounted to mere statement of possibility.

As these cases illustrate the testimony of Doctors Singer and Epstein is insufficiently grounded in any reliable evidence. Framing Dr. Singer's testimony as a hypothetical does not defeat the need for an adequate basis. *Cunningham v. Rendezvous, Inc.,* 699 F.2d 676, 678 (4th Cir.1983). The conclusions Doctors Singer and Epstein reach are also insufficient as a basis for a finding of causality because they fail to consider critical information, such as the most relevant epidemiologic studies and the other possible causes of disease. "[E]ven if a witness is

eminently qualified, even if there is merit to his views, and even if F.R.Evid. 702, 703, 704 and 705 are most liberally interpreted, there must be and ought to be some reliable factual basis on which the opinions are premised." *Johnston v. United States,* 597 F.Supp. 374, 401 (D.Kan.1984).

Dr. Epstein's lengthy master affidavit and Dr. Singer's affidavits contain numerous references to mostly unidentified studies on the effects of exposure to TCDD on animals and on workers after industrial accidents. As already noted, such studies involve doses of dioxin far more concentrated than those alleged to have been inflicted upon any of the veterans. *In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 783 (E.D.N.Y.1984). Neither doctor analyzes the epidemiological studies conducted on Vietnam veterans. The doctors' failure to consider and discuss the studies that address the actual population and amount of exposure involved in this lawsuit confirms the conclusion that their opinions are legally incompetent.

Central to the inadequacy of plaintiffs' case is their inability to exclude other possible causes of plaintiffs' illnesses – those arising out of their service in Vietnam as well as those that all of us face in military and civilian life. For example, the largest number of plaintiffs considered by Dr. Singer suffer from symptoms such as exhaustion, depression, sleep disturbances, anxiety and anger. He concludes that these symptoms are "compatible with" exposure to dioxin. As scientific literature establishes, such symptoms are also frequently identified with Vietnam stress syndrome due to battle and other military stresses. DeFazio, "Dynamic Perspectives on the Nature and Effects of Combat Stress" in *Stress Disorders Among Vietnam Veterans: Theory, Research and Treatment* 23 (C. Figley, ed.1978); Shatan, "Stress Disorders Among Viet-

nam Veterans: The Emotional Content of Combat Continues" in *id.* 43 (both articles on file as subject to court's judicial notice). The onset of stress syndrome may be delayed and the symptoms may persist for decades. DeFazio, *supra,* at 34-35. Dr. Singer in no way rules out stress syndrome as the cause of plaintiffs' neurological symptoms.

Similarly, Dr. Singer has no basis for concluding that the affiants' dermatological difficulties result from exposure to Agent Orange. While many plaintiffs have become bald since leaving Vietnam, baldness is often a natural part of aging. C. Vallis, *Hair Transplantation for the Treatment of Male Pattern Baldness* 45 (1982) ("[i]n normal men advancing age is accompanied by an increase in the incidence and extent of baldness.") (on file as subject to court's judicial notice). Similarly, with respect to dermatitis one source notes:

> There are many forms and many causes. Dermatitis may be caused by inhaling, eating, or touching substances to which the person is allergic. It may be initiated by infection, by exposure to the sun, by poisons, by the application of certain medicinal preparations, by injury, by certain plants (as poison ivy), by exposure to x-rays or radium rays, etc.

J.E. Schmidt, 1 *Attorneys' Dictionary of Medicine,* at D-25-26 (1977).

Both Doctors Singer and Epstein attribute plaintiffs' lymphatic difficulties to Agent Orange exposure. Neither considers the possibility that these plaintiffs suffer from filariasis, a disease affecting the lymphatic system which is caused by tropical worms prevalent in Vietnam. Lawsuits have recently been brought in this court seeking to hold

the government liable for the failure to treat this disease in Vietnam veterans. *See, e.g., Bernagozzi v. United States,* No. 85-CV-1121 (E.D.N.Y. filed Mar. 25, 1985); *Hartman v. United States,* No. 85-CV-1122 (E.D.N.Y. filed Mar. 25, 1985); *Naples v. United States,* No. 85-CV-1123 (E.D.N.Y. filed Mar. 25, 1985) (all subject to court's judicial notice).

Plaintiffs' experts also opine that exposure to Agent Orange has caused the various liver diseases indicated in the checklists. *Compare* Tr. at 179-80 (March 5, 1985) (no causal relationsip between cirrhosis of the liver and Agent Orange exposure) (remarks of Plaintiffs' Management Committee member David Dean). Dr. Singer does not indicate whether the plaintiffs whose cirrhosis of the liver he attributes to Agent Orange are or were heavy alcohol consumers. *See* T. Chen & P. Chen, *Essential Hepatology* 185 (1977) ("[c]irrhosis of all types ranked seventh among the leading causes of mortality in 1973, accounting for 33,000 deaths. Cirrhosis due to alcoholism predominates in the United States * * *.") (on file as subject to court's judicial notice). The undifferentiated hepatitis described by plaintiffs may be caused by alcohol consumption as well as by many other factors in civilian life, including eating contaminated shellfish and blood transfusions. *See, e.g.,* Chen & Chen, *supra,* at 181-82 (alcohol). Of the plaintiffs with hepatitis considered by Dr. Epstein, one admittedly is a "moderate drinker"; the other has a history of alcohol abuse; and the full alcohol history of any of the plaintiffs has not been explored by Dr. Epstein. Dr. Singer does not discuss the alcohol consumption or other life experiences of the affiants he assumes have hepatitis.

Dr. Singer's failure to discuss the individual plaintiffs' medical histories and personal habits is endemic to his analysis. He does not consider alternative possible causes

of illness, even when those potential causes are admitted by the plaintiffs themselves in their affidavits. As the defendants have pointed out without contradiction, certain plaintiffs admit that (a) they smoke several packs of cigarettes a day, (b) they have been exposed to polychlorinated biphenyls (PCBs), (c) they have taken various drugs (Darvon, Donnatol, marijuana), (d) they have suffered from certain conditions (diabetes, malaria, venereal disease, goiter) that they do not claim are related to exposure to Agent Orange, but which are related to other adverse health conditions, and (e) they drink large quantities of alcohol (*e.g.,* 42 beers a week). For example, one plaintiff affiant, James H. Yarborough, claims to suffer from tuberculosis as a result of exposure to Agent Orange, while admitting to a family history of tuberculosis. Dr. Singer still concludes that his tuberculosis was caused by Agent Orange exposure.

On the issue of cancer, Dr. Epstein has himself acknowledged that the approach he uses in *Agent Orange* of ignoring all other possible causes of illness is invalid. In his treatise, *The Politics of Cancer,* Dr. Epstein writes:

> Cancer is now a killing and disabling disease of epidemic proportions. More than 53 million people in the Untied States (over a quarter of the population) will develop some form of cancer, from which approximately 20 percent of the U.S. population will die. It is estimated that 765,000 new cancer cases will be diagnosed in 1979, and there will be 395,000 cancer deaths. Cancer deaths this year alone were about five times higher than the total U.S. military deaths in all the Vietnam and Korean war years combined.
>
> Cancer strikes not only the elderly, but also other age groups, including infants. Among

> males, cancer is the second leading cause of death for all age groups except 15-34 years, where it is exceeded by violent deaths, accidents, homicide, and suicide.

S. Epstein, *The Politics of Cancer* 4 (Anchor Press ed. 1979) (on file as subject to court's judicial notice). He also cites with approval the conclusion of the "blue ribbon HEW draft document, 'Estimates of the Fraction of Cancer in the United States Related to Occupational Factors,' " which states:

> Most cancers have multiple causes: It is a reductionist error and not in keeping with current theories of cancer causation to attempt to assign each cancer to an exclusive single cause.
>
> * * * * * *
>
> Reasonable projections of the future consequences of past exposure to established carcinogens suggested that at least five of them (benzene, arsenic, chromium, nickel oxides, and petroleum fractions) may be comparable in their total effects to asbestos.
>
> * * * * * *
>
> These projections suggest that occupationally related cancers may comprise as much as 20 percent or more of total cancer mortality in forthcoming decades. Asbestos alone will probably contribute up to 13-18 percent, and the data (on the other five carcinogens) suggest at least 10-20 percent more. These data do not include effects of radiation, or effects of a number of other known chemical carcinogens. Although exposure to some of the more important occupational carcinogens has been reduced in recent years, there are still many unregulated carcinogens in the

> U.S. workplaces; a number of occupations are characterized by excess cancer risks that have not yet been attributed to specific agents.
>
> * * * * * *
>
> The conclusion that a substantial fraction of cancers in the United States are occupationally related is not inconsistent with conclusions that a substantial fraction of cancers are also associated with other factors, such as cigarette smoking and diet.

The Politics of Cancer at 376-78. Dr. Epstein recognizes, as he must, that cancer is ubiquitous in our society. He also acknowledges that the etiology of cancer, to the limited extent it is known, has been linked to numerous environmental, biological and genetic factors. *See, e.g., id.* at xv-xvii, 3. One of the main points in *The Politics of Cancer* is that daily exposure to environmental and occupational carcinogens must be recognized as a major source of cancer in the United States:

> Environmental factors incriminated as causes of human cancer encompass a wide range of influences including background and man-made radiation, smoking, naturally occurring plant, fungal bacterial, and chemical carcinogens, and industrial chemical carcinogens contaminating air, water, food, consumer products, and the workplace.

Id. at 19.

Doctors Singer and Epstein identify a number of different kinds of cancer as resulting from Agent Orange exposure. In particular, seventeen plaintiffs suffer from Hodgkin's Disease. The doctors do not reveal the demographical characterististics of these particular plaintiffs. It

is well known that Hodgkin's Disease is more likely to occur in whites, males, and persons in certain age groups. *See,* Schottenfeld, "Epidemiology of Hodgkin's Disease" in *Hodgkin's Disease* 5 (M.J. Lacher ed. 1976); H. Kaplan, *Hodgkin's Disease* 24-29 (1972) (on file as subject to the court's judicial notice). There are roughly 7500 new cases of Hodgkin's Disease per year in the United States. Frank, 13 *Courtroom Medicine* 8-58 (1984). The fact that seventeen of these persons happen to be *Agent Orange* plaintiffs proves nothing about the origin of their condition.

Many of the diseases and afflictions that the doctors attribute to Agent Orange exposure can be similarly analyzed. *See* "Disorders of the Gastrointestinal Tract, Disorders of the Liver, Nutritional Disorders" 68 (J. Dietschy ed. 1976), 1-*The Science and Practice of Clinical Medicine* (J. Sanford ed.) (on file as subject to the court's judicial notice) ("[a]cute diarrheal illness is a worldwide problem and no population or person is spared from its effects"). The point is that Doctors Singer and Epstein rely on hearsay checklists to garner essential facts about plaintiffs and on inapposite literature to reach their conclusions. They ignore more relevant studies and fail to show how the myriad illnesses at issue are more likely to have been caused by Agent Orange than by something else. Such "conclusory and subjective opinions" cannot be considered admissible under Rule 703. *DiRose v. P K Management Corp.*, 691 F.2d 628, 632 (2d Cir.1982), *cert. denied,* 461 U.S. 915, 103 S.Ct. 1896, 77 L.Ed.2d 285 (1983). The doctor's unfounded insistence that Agent Orange caused these afflictions only exacerbates the already emotionally charged atmosphere of this case and requires exclusion under Rule 403 of the Federal Rules of Evidence. *Tabatchnick v. G.D. Searle & Co.*, 67 F.R.D. 49, 55 (D.N.J.1975).

The deposition of Dr. Epstein submitted by plaintiffs and also by defendants demonstrates that his fifteen individual affidavits contain material inaccuracies and sweeping generalizations that are not true. For example, the affidavits attribute all the "disease states" and "complaints" exclusively to Agent Orange exposure in Vietnam. Under examination, however, Dr. Epstein admitted that the "chronic skin rashes" that he listed in his specific affidavit in the *Cockrell* case are in fact unrelated to Agent Orange. Dep. at 281, 293, 305. He made the same admission with respect to the "chronic skin rashes" discussed in his affidavits submitted in connection with the *Loucks* case (Dep. at 375), the *Knight* case (Dep. at 434, 438-39), the *Prunty* case (Dep. at 387), and the *Clarke* case (Dep. at 322). In addition, Dr. Epstein conceded that the "infertility" identified in his *Clarke* affidavit cannot in fact be attributed to Agent Orange. *Id.* He also retreated from the conclusion in his specific affidavit that two of plaintiff Johns' disease states — *i.e.,* "cavernous angioma of the brain" and "bile duct microadenoma" — were caused by Agent Orange. Dep. at 165.

His deposition also shows that Dr. Epstein's conclusions are based on (1) incomplete or complete lack of knowledge of the family histories of the plaintiffs; (2) complete lack of knowledge concerning the geographical locations in which the plaintiffs lived; (3) incomplete or complete lack of knowledge concerning each plaintiff's occupational exposures; and (4) incomplete or complete lack of knowledge concerning the likelihood of exposure to Agent Orange in Vietnam.

Dr. Epstein made little if any effort to assess the possible environmetnal exposures to carcinogens experienced by the 15 plaintiffs from "a couple of hundred" he selected. Dep. at 18. In the case of Daniel Sweet, for exam-

ple, Dr. Epstein's disregard for exposure to other environmental carcinogens in arriving at his causation opinion is evident in his deposition:

> Q: Do you know any other substances to which Mr. Sweet was exposed in Vietnam?
>
> A. I don't have any record but I would be very surprised if he wasn't exposed to other materials, too.
>
> * * * * * * *
>
> Q. Anything else that you can think of that's quite possible?
>
> A: You name it. It's a wide range of material we used [in Vietnam].

Dep. at 67-68. It is clear from Mr. Sweet's case and from his testimony concerning the other fourteen cases that Dr. Epstein completely disregarded not only generally accepted scientific methodology but his own methodology for determining cancer causation, and that he did not rely on data and information reasonably relied upon by experts in the field. *See* Fed.R.Ev. 703.

In *The Politics of Cancer,* Dr. Epstein lists various means for the prevention of cancer. The steps include (1) *stop smoking* ("The most effective single action you can take is never to start smoking or, if this advice comes too late, to stop smoking as quickly as possible."); (2) *reduce alcohol ingestion* ("While there is no direct evidence that alcohol is itself a carcinogen, heavy drinking, particularly of hard liquor, increases the risk of developing cancer of the mouth, throat, esophagus, larynx and liver."); (3) *monitor the types and quantities of food eaten* ("Your dietary choices and habits are clearly important. Some diets may reduce your cancer risk, while others may increase it."); (4) *monitor water intake* ("It is now common

knowledge that drinking water in most cities, particularly downstream from chemical industries, contains a great variety of synthetic organic chemicals, of which more than 700 have so far been identified, including many known carcinogens."); (5) *monitor use of drugs* ("A wide range of drugs are known to be carcinogenic, as shown by human experience and animal tests."); (6) *monitor use of cosmetics* (avoid using products containing carcinogens such as certain hair dyes); (7) *avoid X-rays* ("X-rays are carcinogenic. The more X-rays you submit to and the greater the dose, the greater is your risk of cancer. Avoid unnecessary X-rays like the plague."); (8) *monitor sexual activity* (sexual activity may influence the development of various cancers); (9) *avoid sunlight;* (10) *where you live* ("This influences your overall risks of cancer, and also the particular type you may get."); (11) *your home* ("Your house or apartment can expose you to hidden carcinogenic hazards."); and (12) *your race* ("You should recognize that race and color are factors that may be associated with excess risks of cancer."). *The Politics of Cancer* at 473-92. In addition, Dr. Epstein identifies various consumer products to avoid – spray cans, pesticides, and cleaning agents and solvents. *Id.* at 493-94. Finally, Dr. Epstein notes that various industries and hobbies are to be avoided – petrochemical, asbestos, steel, smelting and mining industries, and arts and crafts. *Id.* at 494-98. The fact that these plaintiffs plunged into life by patriotically going to war for the country makes it unlikely that any of them wrapped themselves in a cocoon-like environment free of toxic hazards.

In none of the fifteen cases purportedly analyzed by Dr. Epstein did he realistically assess the effect of the factors identified, not by defendants or their experts, but by Dr. Epstein himself. His deposition revealed that Dr. Epstein

failed to apply what he himself recognized as appropriate criteria in any consistent fashion in the fifteen cases. For example, in the *Johns* case Dr. Epstein failed to consider a genetic etiology for the Hodgkin's disease at issue despite a clear indication in Johns' medical records that his disease might have been inherited. Dep. at 174-75. Similarly, in the *Knight* case, Dr. Epstein rendered an ultimate opinion about causation despite the fact that he admittedly had no information predating Knight's tour of duty in Vietnam. Dep. at 435-39. In *Sweet,* Dr. Epstein admitted the lack of scientific evidence relating Agent Orange exposure to cancer of the ileum which is the disease at issue in that case. Dep. at 70. He also failed to account for histories of alcohol and tobacco abuse in a number of the cases.

There is no point in further analyzing each of the fifteen cases Dr. Epstein addresses. It is enough to say that his deposition reveals a pervasive lack of information that he, as a leading scientist, knew he should have obtained. Defendants' withering analysis of his deposition testimony is a part of the record. *See* Defendants' Supplemental Memorandum in Oppostion to Plaintiffs' Motion for Partial Summary Judgment and Reply Memorandum in Further Support of Defendants' Motion to Dismiss And/or for Summary Judgment, at 11, *et seq.* (April 29,1985).

4. *Rule 403*

Rule 403 requires the court to exclude relevant evidence "if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury * * *." A determination to exclude such evidence lies within the trial court's discretion. *Jackson v. Johns-Manville Sales Corp.*, 750 F.2d 1314, 1319 (5th Cir.1985).

Any decision to allow or to exclude evidence under Rule 403 must be based on a detailed analysis of the specific facts of the case at hand – precedent is of little value. *See, e.g., Jackson v. Johns-Manville, supra* (letters of asbestos manufacturers discussing dangers of asbestos dust highly probative and danger of unfair prejudice minimal); *Ellis v. International Playtex, Inc.*, 745 F.2d 292, 304-05 (4th Cir.1984) (trial court correctly concluded that probative value of toxic shock syndrome study high and jury confusion unlikely because statistics straightforwardly presented); *Moe v. Avions Marcel Dassault-Breguet Aviation*, 727 F.2d 917, 934 (10th Cir.) (no abuse of discretion by trial court in excluding evidence of subsequent remedial efforts as having low probative value and being prejudicial), *cert. denied*, ____ U.S. ____, 105 S.Ct. 176, 83 L.Ed.2d 110 (1984); *Kehm v. Procter & Gamble Manufacturing Co.*, 724 F.2d 613, 620 (8th Cir.1983) (CDC epidemiological studies of toxic shock syndrome admissible as not prejudicial under Rule 403); *Wilk v. American Medical Association*, 719 F.2d 207 (7th Cir. 1983) (in antitrust case against American Medical Association, evidence that chiropractor had arrangement with mattress company probative but unduly prejudicial and should have been excluded), *cert. denied*, ____ U.S. ____, 104 S.Ct. 2398-99, 81 L.Ed.2d 355 (1984); *Litton Systems, Inc. v. American Telephone and Telegraph Co.*, 700 F.2d 785 (2d Cir.1983) (affirming trial court's decision in antitrust case to exclude evidence of bribery by corporate officials as unduly prejudicial), *cert. denied*, ____ U.S. ____, 104 S.Ct. 984, 79 L.Ed.2d 220 (1984); *Securities and Exchange Commission v. Carriba Air, Inc.*, 681 F.2d 1318 (11th Cir. 1982) (affirming trial court's decision to exclude testimony in an action to enjoin alleged violations of the securities laws).

Trial courts properly are reluctant to exclude relevant evidence unless there is a powerful and compelling reason to do so. *See* Fed.R.Ev. 102, 401-403; Gold, "Limiting Judicial Discretion to Exclude Prejudicial Evidence," 18 U.C.D.L.Rev. 59 (1984). Obviously, courts will be more likely to exclude evidence whose probative value is extremely low. *See, e.g., Meller v. Heil Co.,* 745 F.2d 1297 (10th Cir.1984) (no error to exclude evidence that plaintiff who was crushed in an accident stored hashish pipes in the vehicle; low probative value); *see also American Bearing Co., Inc. v. Litton Industries, Inc.,* 729 F.2d 943, 950 n. 14 (3d Cir.) ("[a]s the district court correctly found, the speculation and unfounded assumptions underlying [the expert's] testimony decreased its probative value, perhaps to the level of the gossamer.") *(dictum), cert. denied,* ____ U.S. ____, 105 S.Ct. 178, 83 L.Ed.2d 112 (1984).

Exclusion of evidence of low probative value is particularly appropriate when admission would result in expenditures of substantial trial time and jury confusion. For example, the Court of Appeals for the Second Circuit in *City of New York v. Pullman,* 662 F.2d 910 (2d Cir.1981), *cert. denied,* 454 U.S. 1164, 102 S.Ct. 1038, 71 L.Ed.2d 320 (1982), affirmed the exclusion of an interim report prepared by the staff of the Urban Mass Transit Administration. The court found that even if the report were admissible under the 803(8)(C) hearsay exception, it was properly excluded under Rule 403. The report had been prepared for a different purpose, it was incomplete, based primarily on hearsay, and its admission

> would have been likely to protract an already prolonged trial with an inquiry into collateral

> issues regarding the accuracy of the report and the methods used in its compilation.

Id. at 915.

In complex and protracted litigation, waste of the trier's time is a particularly telling factor. Thus, in *Weit v. Continental Illinois National Bank and Trust Co.*, 641 F.2d 457 (7th Cir.1981), *cert. denied,* 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982), the Seventh Circuit affirmed the trial court's decision in a complex antitrust case to grant summary judgment after eight years of discovery. Although the lower court concluded that plaintiffs had failed to meet their burden of producing significant probative evidence of the illegal conspiracies alleged, plaintiffs on appeal contended that the evidence excluded below would have met their burden. The Seventh Circuit affirmed the court's exclusion of defendant's lobbying activities under Rule 403, finding that inclusion of such evidence "pose[d] a serious problem of confusion of issues." *Id.* at 467. The waste-of-time ground for exclusion is particularly persuasive when detailed rebuttal testimony would be necessary to establish that the proffered evidence lacks probative worth. *See, e.g., Kim v. Coppin State College,* 662 F.2d 1055, 1066 (4th Cir.1981).

A false aura of scientific infallibility, coupled with low probative value, increases resistance to admitting evidence since it multiplies the hazards of misleading a jury. *See, e.g., City of New York v. Pullman, Inc.,* 662 F.2d 910, 915 (2d Cir. 1981), *cert. denied,* 454 U.S. 1164, 102 S.Ct. 1038, 71 L.Ed.2d 320 (1982); *In re Air Crash Disaster at John F. Kennedy International Airport on June 24, 1975,* 635 F.2d 67, 73 (2d Cir.1980); *Marx & Co., Inc. v. Diners' Club, Inc.,* 550 F.2d 505, 511-12 (2d Cir.),

cert. denied, 434 U.S. 861, 98 S.Ct. 188, 54 L.Ed.2d 134 (1977).

As established *supra,* section IV.A.3, "the speculation and unfounded assumptions underlying [the] testimony [of Doctors Singer and Epstein] decrease its probative value, perhaps to the level of the gossamer." *American Bearing Co., Inc. v. Litton Industries, Inc.,* 729 F.2d 943, 950 n. 14 (3d Cir.), *cert. denied,* ____ U.S. ____, 105 S.Ct. 178, 83 L.Ed.2d 112 (1984). At the same time, the affidavits address highly technical and difficult questions of medical science in a misleading way.

There is a strong probability that the doctors' testimony would mislead and confuse at least some members of the jury. Establishing the low probative value of the affidavits would entail an unwarranted expenditure of time and effort. The introduction of plaintiffs' evidence would protract this prolonged litigation. *City of New York v. Pullman, Inc.,* 662 F.2d 910, 915 (2d Cir.1981), *cert. denied,* 454 U.S. 1164, 102 S.Ct. 1038, 71 L.Ed.2d 320 (1982).

In sum, the court finds the expert evidence of Doctors Singer and Epstein inadmissible under Federal Rules of Evidence 703 and 403. The next inquiry is whether without this evidence plaintiffs are capable of establishing the essential material issue of fact – causation.

B. *Legal Standard Governing Summary Judgment*

The Federal Rules of Civil Procedure require that a party moving for summary judgment show "that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed.R.Civ.P. 56(c). The initial burden rests on the moving party to demonstrate the nonexistence of a genuine issue

of fact. *Adickes v. S.H. Kress and Co.*, 398 U.S. 144, 157, 90 S.Ct. 1598, 1608, 26 L.Ed.2d 142 (1970). At this point, the party opposing summary judgment must point to evidence that a genuine issue as to a material fact does exist. *United States v. One Tintoretto Painting Entitled "The Holy Family with Saint Catherine and Honored Donor,"* 691 F.2d 603, 606 (2d Cir.1982).

A mere possibility that a fact issue may exist is not enough to defeat the motion. *United States v. Potamkin Cadillac Corp.*, 689 F.2d 379, 381 (2d Cir.1982). When "a motion for summary judgment is made * * * an adverse party may not rest upon the mere allegations or denials of this pleadings, but his response, by affidavits or as otherwise provided in this Rule, must set forth *specific facts* showing that there is a genuine issue for trial." Fed.R. Civ.P. 56(e) (emphasis supplied). *See also First National Bank of Arizona v. Cities Service Co.*, 391 U.S. 253, 289, 88 S.Ct. 1575, 1592, 20 L.Ed. 569 (1968).

Despite its generally restrictive attitude towards summary judgment, the Court of appeals for the Second Circuit has repeatedly indicated that a litigant opposing summary judgment " 'may not rest upon mere conclusory allegations or denials' as a vehicle for obtaining a trial." *Quinn v. Syracuse Model Neighborhood Corp.*, 613 F.2d 438, 445 (2d Cir.1980). Recently, the Second Circuit, in granting summary judgment in a Title VII case, noted that "the salutary purposes of summary judgment – avoiding protracted, expensive and harassing trials – apply no less to discrimination cases than to commercial or other areas of litigation." *Meiri v. Dacon,* 759 F.2d 989, 998 (2d Cir.1985); *see also Attorney General v. Irish Northern Aid Committee,* 668 F.2d 159, 162 (2d Cir.1982) (conclusory allegations as to agency status insufficient to defeat sum-

mary judgment) (*per curiam); Securities and Exchange Commission v. Research Automation Corp.*, 585 F.2d 31, 33 (2d Cir.1978) ("policy favoring efficient resolution of disputes, which is the cornerstone of the summary judgment procedure, would be completely undermined if unsubstantiated assertions were sufficient to compel a trial."); *Freick v. Fleener*, 653 F.2d 69, 77 (2d Cir.1981) ("[c]ourts, refusing to exalt form over substance, cannot be awed by procedural spectres, and cannot be swayed by feigned issues"); *Friedman v. Beame*, 558 F.2d 1107, 1112 n. 11 (2d Cir.1977) (opponent of motion for summary judgment "required to do more than merely rely on the conclusory allegations contained in the affidavit he submitted"); *Donnelly v. Guion*, 467 F.2d 290, 293 (2d Cir.1972) (affidavit containing mere conclusory denials insufficient response to factually detailed affidavit submitted by proponent of summary judgment motion); *Applegate v. Top Associates, Inc.*, 425 F.2d 92, 96 (2d Cir.1970) ("neither courts nor defendants should be subjected to trials which can be little more than harassment"); *Taylor v. Mayone*, 574 F.Supp. 609, 612-13 (S.D.N.Y.1983) ("mere speculation as to the existence of [a genuine issue of fact] is insufficient to defeat a summary judgment motion"); *Childers v. High Society Magazine, Inc.*, 561 F.Supp. 1374, 1375 n. 2 (S.D.N.Y.1983) (Rule 56 was not intended " 'to preserve purely speculative issues of fact for trial.' "); *Imperial Veal & Lamb Co., Inc. v. Caravan Refrigerated Cargo, Inc.*, 554 F.Supp. 499, 501 (S.D.N.Y. 1982) (conclusory affidavit insufficient); *cf. Richard v. Credit Suisse*, 242 N.Y. 346, 350, 152 N.E. 110, 111 (1926) (Cardozo, J.) ("The very object of a motion for summary judgment is to separate what is formal or pretended in denial or averment from what is genuine and substantial, so that only the latter may subject a suitor to the burden of a trial.").

Other circuits concur. *See, e.g., Long v. Bureau of Economic Analysis,* 646 F.2d 1310 (9th Cir.) (in Freedom of Information Act case, generalized affidavits demonstrating that neither the government planning officer nor the division chief had specific knowledge of any significant risk entailed in releasing the exempted information insufficient to defeat the motion), *vacated on other grounds,* 454 U.S. 934, 102 S.Ct. 468, 70 L.Ed.2d 242 (1981); *State Mutual Life Assurance Co. v. Deer Creek Park,* 612 F.2d 259, 264 (6th Cir. 1979) ("Affidavits composed of hearsay and opinion evidence do not satisfy Rule 56(e) and must be disregarded."); *id.* at 2568 (same); *Abraham v. United States,* 465 F.2d 881, 883 (5th Cir. 1972) (conclusory expert opinion that no mismanagement occurred insufficient to defeat motion for summary judgment).

Courts are particularly indisposed to allowing conclusory allegations to defeat summary judgment after there has been – as here – opportunity for discovery. *Weit v. Continental Illinois National Bank & Trust Co.,* 641 F.2d 457, 464 (7th Cir.1981); *cert. denied,* 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982); *see also, e.g., Grumman Allied Industries, Inc. v. Rohr Industries, Inc.,* 748 F.2d 729, 740 (2d Cir. 1984) (after "extensive and intensive discovery, spanning a number of years and yielding tens of thousands of pages of * * documents * * *, the factual development necessary to the principled resolution of this complex dispute was not terminated prematurely" by summary judgment); *Schering Corp. v. Home Insurance Co.,* 712 F.2d 4, 10 (2d Cir.1983) (summary judgment should not be granted where party opposing it seeks timely discovery of potentially favorable information). While undoubtedly the individual cases of the opt-out plaintiffs

waranted further discovery, plaintiffs can hardly complain that they had no opportunity to find out what their medical problems were and what their own life patterns had been.

As *Weit, supra,* suggests, if no material issue of fact exists and the moving party would be entitled to a directed verdict, then the court should grant summary judgment. *American Manufacturers Mutual Insurance Co. v. American Broadcasting-Paramount Theatres, Inc.,* 388 F.2d 272, 279 (2d Cir.1967); J. Moore, 6 Part 2 *Moore's Federal Practice* ¶ 56.15[8] at 56-642. There is no reason to require trial on the off-chance that a presently unobservable disputed fact issue will develop. Wright, Miller & Kane, *Federal Practice & Procedure: Civil 2d* § 2713.1 at 619 (1983); *see also National Industries, Inc. v. Republic National Life Insurance Co.,* 677 F2.d 1258, 1265 (9th Cir. 1982) ("summary judgment should be granted when evidence in support of the motion would, if uncontradicted, entitle the moving party to a directed verdict if the case were to proceed to trial."); *Neely v. St. Paul Fire and Marine Insurance Company,* 584 F.2d 341, 346 (9th Cir.1978) (affirming grant of summary judgment where "a jury would inevitably have to rely in large part upon surmise and speculation" in determining cause of contamination of engines; directed verdict would be appropriate).

Were trials to go forward in each of the opt-out cases, scores of judge-years would be required. Each of the hundreds of cases would take months to try. On the basis of the evidence submitted by plaintiffs, none could result in a supportable plaintiffs' verdict. There is no excuse for such a squandering of scarce public resources.

The inability to defeat a motion for summary judgment with conclusory allegations extends to use of expert opinion. The leading case in this area, *Merit Motors, Inc. v. Chrysler Corp.*, 569 F.2d 666 (D.C. Cir.1977) (Wright, J.), was discussed earlier. Asserting that plaintiff's "position that an expert's opinion that lacks *any* credible support creates an issue of 'fact' is clearly untenable," *id.* at 673 n. 27, Judge Wright concluded:

> To hold that Rule 703 prevents a court from granting summary judgment against a party who relies solely on an expert's opinion that has no more basis in or out of the record than [the expert's] theoretical speculations would seriously undermine the policies of Rule 56.

Id. at 673.

In *Kern v. Tri-State Insurance Co.*, 386 F.2d 754 (8th Cir.1967), plaintiff sought to avoid the statute of limitations by alleging that he became insane and remained so for 10 years after defendant insurance company cancelled his contract. To support his allegation, plaintiff submitted the affidavit of a medical expert who based his opinion on letters of other doctors and summaries of hospital records. Much of his opinion was directly contradicted by other facts of which the trial court took judicial notice. Finding that the trial court "would have been within its rights in rejecting the affidavit as pure speculation and not substantial evidence," the Eighth Circuit affirmed summary judgment and rejected the affidavit. *Id.* at 756.

Expert evidence was rejected with equal firmness in *Springfield Township v. Lewis*, 702 F.2d 426 (3rd Cir.1983). Plaintiffs, environmental groups and local government units, had challenged a federally drafted Environmental Impact Statement in an effort to enjoin construction of an

interstate highway segment. Plaintiffs submitted affidavits of their traffic expert, a registered independent engineer, who contended that the New Jersey Department of Transportation's traffic studies and data were derived from inappropriate and inaccurate traffic forecasting methods. The trial court undertook "an exhaustive, paragraph-by-paragraph dissection of [the expert's] affidavits * * * and found in them nothing that impeached the accuracy of [the State's] traffic forecasts"; they were full of "internal contradictions" and " 'consist[ed] largely of unsupported opinion.' " *Id.* at 440-41. The Court of Appeals affirmed the granting of summary judgment.

Courts in New York show a similar unwillingness to allow unacceptable expert affidavits to defeat a motion for summary judgment in all types of cases, including those based on theories of tort. *See, e.g., Reinert v. Town of Johnsburg,* 99 A.D.2d 572, 471 N.Y.S.2d 398, 399 (3d Dep't 1984) (conclusory allegations by plaintiff and his counsel insufficient to raise issue of fact regarding constructive notice in negligence action against town and country); *Sun Yau Ko v. Lincoln Savings Bank,* 99 A.D.2d 943, 473 N.Y.S.2d 397, 399 (1st Dep't) (granting summary judgment to defendants where plaintiffs failed to substantiate with concrete facts claims of negligence in storing gold bars), *aff'd,* 63 N.Y.2d 938, 479 N.Y.S.2d 213, 468 N.E.2d 51 (1984); *Lopez v. Senatore,* 97 A.D.2d 787, 468 N.Y.S.2d 527 (2d Dep't 1983) (conclusory allegations contained in affidavit of plaintiff's physician as to permanency of plaintiff's injuries were insufficient as a matter of law to establish *prima facie* case of serious injury, thus entitling defendant to summary judgment on personal injury claim), *appeal dismissed,* 63 N.Y.2d 602, 480 N.Y.S.2d 1024, 469 N.E.2d 102 (1984); *Baly v. Chrysler Credit Corp.,* 94 A.D.2d 781, 463 N.Y.S.2d 233 (2d Dep't 1983) (summary judgment for plaintiffs granted

where defendant's affidavits as to contributory negligence in an auto accident were conclusory and speculative, merely alleging that plaintiffs were injured because they failed to wear seat belts); *Hanrog Distributing Corp. v. Hanioti,* 10 Misc.2d 659, 54 N.Y.S.2d 500, 501 (S.Ct. Special Term, N.Y.Cty.1945) ("the very nature of the averments contained in defendant's affidavit show that the issue sought to be created is neither genuine nor substantial"; motion granted).

From this review of the relevant law, several clear principles emerge. Although summary judgment is a drastic procedural device, courts in the Second and other Circuits follow the edicts of Rule 56(e) and do not allow mere conclusory allegations that a factual dispute exists to defeat a motion for summary judgment. This general prohibition extends to the use of conclusory allegations by experts.

The numerous epidemiological studies discussed *supra* III.A-B are sufficient to shift the burden to plaintiffs of showing that a material fact exists as to causation. *See* Rule 56(e). Plaintiffs attempted to meet their burden through expert affidavits that are wholly conclusory and unfounded in fact. *See supra* III.A.2.

Ever since the defendants moved for summary judgment over nine months ago, plaintiffs have argued that further evidence would be developed at trial. But no such evidence has been produced and none is in the offing. Courts cannot wait forever. They must decide cases now. *See Neely v. St. Paul Fire and Marine Insurance Co.,* 584 F.2d 341, 344 (9th Cir.1978) ("mere hope that further evidence may develop prior to trial" insufficient grounds for denying the motion). The summary judgment procedure enables adjudication without delays and a lengthy trial where no issue of fact exist.

In the instant case, years of discovery and tens of millions of dollars spent by the government and others on research has not yielded any competent evidence indicating a genuine issue of fact about causation. Plaintiffs have had more than enough time to develop their cases. Moreover, plaintiffs' counsel, when offered the opportunity for additional time to conduct discovery, declined it. Tr. at 39-40 (April 15, 1985). *See Schering Corp. v. Home Insurance Co.*, 712 F.2d 4, 10 (2d Cir.1983).

The largest possible number of plaintiffs who presently state that they suffer from chloracne is six. Arguably, these plaintiffs might have made out a material issue of fact regarding causation had they furnished medical diagnoses and shown that the condition developed in Vietnam. Even if their condition were established as chloracne, since chloracne is usually transient, it is hihgly unlikely that they could establish that the present disease was caused by exposure to Agent Orange more than ten years ago. The government has assumed responsibility for chloracne through legisaltion. Veterans' Dioxin and Radiation Exposure Compensation Standards Act, Pub.L. No. 98-542, 98 Stat. 2725 (1984). Had plaintiffs been recognized by the government as having had chloracne because of exposure to Agent Orange, this factor would have been brought to the court's attention. The minor chloracne claims — whose *bona fides* have simply not been established — are not sufficient to warrant allowing this massive case to go forward. *See* Tr. at 182 (March 5, 1985) ("chloracne without disability is not compensable") (remarks of Plaintiffs' Management Committee member David Dean).

After careful scrutiny of all available evidence in this protracted litigation, there is no doubt that a directed verdict at the close of each of plaintiffs' cases would be required. Such careful scrutiny of proposed evidence is espe-

cially appropriate in the toxic tort area. The uncertainty of the evidence in such cases, dependent as it is upon speculative scientific hypotheses and epidemiological studies, creates a special need for robust screening of experts and gatekeeping under Rules 403 and 703 by the court. *Cf. Manual for Complex Litigation 2d* § 21.4.8 at 21-60-61 & nn. 117-20 (Draft February 1985). As the Seventh Circuit has pointed out in the context of another kind of protracted litigation: "We simply cannot turn our heads and ignore the practical realities of complex * * * litigation." *Weit v. Continental Illinois National Bank and Trust Co.*, 641 F.2d 457, 464 (7th Cir.1981) (affirming grant of summary judgment where plaintiffs failed to develop any probative evidence after eight years of discovery), *cert. denied*, 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982); *see also Meiri v. Dacon*, 759 F.2d 989, 998 (2d Cir.1985) (affirming summary judgment in Title VII case and noting appropriateness of such a result "[g]iven the ease with which these suits may be brought and the energy and expense required to defend such actions * * *"). Such an approach is fully consistent with Rule 102 of the Federal Rules of Evidence. *Cf. Kern v. Tri-State Insurance Co.*, 386 F.2d 754, 757 (8th Cir.1967) (not consistent with Rule 1 of the Federal Rules of Civil Procedure to allow litigant to put defendants to expense of trial based on conclusory hearsay affidavit).

In the *Agent Orange* litigation, it is remotely possible that a causal connection may at some time in the future be proved. As time goes on, proof of connection to Agent Orange becomes less and less likely because the aging Vietnam veterans are continuously exposed to confounding substances and morbidity rises sharply with age from many natural causes. We can say that proof has not been produced in this court sufficient to go to the jury.

C. *Law of Causation*

Plaintiffs are unable to establish that a material issue of fact exists about causation. The final inquiry is whether defendants are therefore entitled to judgment as a matter of law. *Securities & Exchange Commission v. Research Automation Corp.*, 585 F.2d 31, 35 (2d Cir.1978). This court has previously held that national consensus law applies to questions of law in the Agent Orange litigation. *See In re "Agent Orange" Product Liability Litigation,* 580 F.Supp. 690, 701 (E.D.N.Y.1984). Arguably, this result would not follow when individual, rather than class action, suits are tried. But whatever jurisdiction's law is applied, under either a strict liability or negligence theory, plaintiffs must establish by a preponderance of the evidence a but-for causal connection between their claimed injuries and exposure to Agent Orange.

As Professor Rosenberg has summarized existing law, courts are divided between "strong" and "weak" versions of the preponderance rule. Rosenberg, "The Causal Connection in Mass Exposure Cases: A 'Public Law' Vision of the Tort System," 97 Harv.L.Rev. 851, 857 (1984). Under the "strong" version, plaintiff must offer both epidemiologic evidence that the probability of causation exceeds fifty percent in the exposed population *and* "particularistic" proof that the conduct complained of caused him harm individually.

Miller v. National Cabinet Co., 8 N.Y.2d 277, 204 N.Y.S.2d 129, 168 N.E.2d 811 (1960), is illustrative. There, the New York Court of Appeals held that plaintiff failed to establish a causal connection between exposure to benzene contained in varnish removers and development of leukemia. Plaintiff's expert lacked any statistical studies and merely concluded that it was "possible" benzene could

cause leukemia – refusing to say whether it had in fact caused plaintiff's death. *Id.* 204 N.Y.S.2d at 132-33, 168 N.E.2d 814-815. The Court of Appeals concluded that the expert's uncertainty coupled with the lack of statistical evidence precluded the establishment of causation and dismissed the claim. *See also Johnston v. United States*, 597 F.Supp. 374, 412 (D.Kan.1984) (statistics showing greater than 50% probability of causation insufficient without more to establish causation to a reasonable degree of medical certainty).

Plaintiffs rely on *Ferebee v. Chevron Chemical Co.*, 736 F.2d 1529 (D.C.Cir.), *cert. denied*, ____ U.S. ____, 105 S.Ct. 545, 83 L.Ed.2d 432 (1984), for the proposition that courts do not require epidemiological and particularistic evidence to establish causation in fact. *Ferebee* involved the death of an agricultural worker who died of pulmonary fibrosis, allegedly as a result of long-term exposure to paraquat. Plaintiff's treating physicians, eminent specialists in pulmonary medicine testified that paraquat poisoning caused his death. *Id.* at 1535. Defendants argued that the views of plaintiff's experts were not yet accepted by the medical community and as such were inadmissible.

The Court of Appeals in *Ferebee* found this argument – essentially based on Federal Rule of Evidence 702 – unpersuasive. The question is not whether the opinion itself is accepted in the relevant community, but instead whether the technique is. Inferences from examination and testing, the court found, is clearly an accepted methodology. *Id.* at 1535-36; *see also supra* at IV.A.2.(a)-(b) (finding methodology of Doctors Singer and Epstein acceptable). Thus, the *Ferebee* court concluded:

> [a]s long as the basic methodology employed to reach such a conclusion is sound, such as use of

> tissue samples, standard tests, and patient examination, products liability law does not preclude recovery until a "statistically significant' number of people have been injured or until science has had the time and resources to complete sophisticated laboratory studies of the chemical.

Id. at 1535-36.

This conclusion with respect to Mr. Ferebee's claims is fully consistent with dismissal of the instant plaintiffs' claims. Agent Orange presents an entirely different set of problems. *Ferebee* did not require epidemiologic studies because, unlike the instant case or *Miller,* plaintiff presented technically competent, probative evidence by his treating physicians that the chemical in question in fact led to his death. Moreover, while the *Ferebee* court did not require epidemiologic studies, presumably it would have considered such studies relevant had they existed. In the *Agent Orange* case, no competent particularistic evidence has been presented and the relevant epidemiologic evidence is negative. Finally, in *Ferebee,* plaintiff established long-term, intensive exposure to paraquat. The veterans' exposure to Agent Orange, even were we to grant full force to their inadequate affidavits, was much more attenuated.

In sum, the court does not read *Ferebee* as espousing a more relaxed version of the preponderance standard for establishing causation-in-fact. In *Ferebee,* plaintiff's experts were relatively certain of the cause of his disease and no epidemiological proof was necessary. *Compare Allen v. United States,* 588 F.Supp. 247, 416-43 (D. Utah 1984) (determining whether plaintiffs' injuries were causally connected to radiation exposure based upon overwhelming

weight of scientific evidence that such a relationship existed as to certain diseases). *Ferebee* is thus consistent with the established rule that a plaintiff must offer evidence that causation was more than 50 percent probable.

Two state court nonjury decisions illustrate this requirement. In *Meehan v. State,* 95 Misc.2d 678, 408 N.Y.S.2d 652 (Ct.Cl.1978), parents sued the State of New York for their children's injuries, allegedly caused by the Department of Transportation's negligently storing rock salt near plaintiffs' well which led to its contamination. The Court of Claims found that the salt discovered near the claimants' well originated in the state's salt storage facility. *Id.* at 656. The remaining issue was whether the level of chlorides and sodium in the well water caused the digestive problems suffered by the children. The state offered expert testimony based on medical records and health department tests concluding unequivocally that the salt contamination of the well did not produce plaintiffs' symptoms. Plaintiffs, on the other hand, offered a medical expert who stated "merely that salt *could* produce the symptoms exhibited by the children, but was unwilling to state that salt was the competent producing cause of their illnesses." *Id.* at 657. Concluding that such a remote possibility of causation was insufficient, the court dismissed the case.

In another underground contamination case, *Ayers v. Jackson Township,* 189 N.J. Super. 561, 461 A.2d 184 (1983), plaintiffs sued for injuries allegedly resulting from groundwater pollution by a municipal landfill. Plaintiffs alleged in part that they suffered an enhanced risk of developing cancer as well as liver and kidney disease. They proffered expert testimony that plaintiffs' well water contained known carcinogens and that individuals exposed to the contaminated water were at increased risk of develop-

ing cancer depending upon dose and duration of exposure and inherent susceptibility. *Id.* at 186-87. None of the experts, however, could say with "a degree of reasonable medical probability" that any or all of the plaintiffs would suffer from any of the alleged diseases in the future. Without any ability to quantify the enhanced risk or predict whether plaintiffs would contract cancer, the court granted summary judgment for defendants.

State courts in other personal injury situations also require a 50 percent-plus degree of probability of causation. *Compare, Cohenour v. Smart,* 205 Okla. 668, 240 P.2d 91 (1951) (granting new trial where plaintiff's expert could not rule out possibility that prior automobile accidents caused plaintiff's injury), *with Menarde v. Philadelphia Transportation Co.*, 376 Pa. 497, 103 A.2d 681, 684 (1954) (expert certain accident caused plaintiff's cancer).

The requirement of a reasonable probability assessment in expert testimony on causation is not limited to cases involving personal injury, and is particularly important when establishing causation in a product liability action. For example, in *Lanza v. Poretti,* 537 F.Supp. 777 (E.D.Pa.1982), the district court excluded opinion evidence of a fire inspector because he spoke only in terms of possibilities and was unable to eliminate other potential causes. *See also Perkins v. Volkswagen of America, Inc.*, 596 F.2d 681, 682 (5th Cir.1979) (affirming entry of directed verdict, where plaintiff's expert not qualified to testify as to automobile design defects and plaintiff failed to establish causation); *compare Breidor v. Sears, Roebuck and Co.*, 722 F.2d 1134, 1138 (3d Cir.1983) (exclusion of expert testimony abuse of discretion where it was useful in explaining how fire started because expert identified cause of fire in terms of probabilities by eliminating all but one reasonable potential cause).

In the instant case, plaintiffs' experts lack a requisite basis for assessing probabilities about causation. Even if the testimony of Dr. Singer were admissible, he does not rule out the myraid other possible causes of the veterans' afflictions. He merely concludes that "absent any evidence of pre-existing, intervening, or superseding causes," Agent Orange caused plaintiffs' difficulties.

Dr. Epstein purports to eliminate other possible causes of disease in his fifteen individual affidavits. His conclusion that plaintiffs have not been exposed to toxic substances other than Agent Orange is based on plaintiffs' form affidavits. It is evident from his own writings and his deposition that the documents he relied upon would not suffice for a reasonable medical opinion. As already established, these affidavits fail to comply with the requirements of Rule 703.

D. *Other Grounds*

1. *Lack of Proof of Who Was Harmed and Who Caused Harm*

Having voluntarily given up the advantages of the class action, each plaintiff is in the position of being unable to prove either (1) that his disease is due to Agent Orange, or (2) that any particular defendant produced the Agent Orange to which he may have been exposed. No case has ever permitted recovery in such a situation. *See* discussion of "Failure to Determine Who Was Harmed and Who Caused Harm," *In re "Agent Orange" Product Liability Litigation*, 597 F.Supp. 740, 816-844 (E.D.N.Y. 1984). There is no possible theory of law on which these individual opt-out plaintiffs can recover. Id. at 843.

2. *Statutes of Limitation*

A number of the individual plaintiffs have difficulties with the statutes of limitation. *See In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 800-16, 879 ff. (E.D.N.Y.1984). There is no point in reviewing each of the hundreds of cases since other grounds for dismissal are clear.

3. *Government Contract Defense*

Plaintiffs are unable to overcome defendants' government contract defense. *See, e.g., In re "Agent Orange" Product Liability Litigation,* 534 F.Supp. 1046 (E.D.N.Y.1982); *In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 795-96 (E.D.N.Y.1984); *Koutsoubos, Spiros v. Boeing Vertol.,* 755 F.2d 352 (3d Cir. 1985). The doctrine has been criticized. *See, e.g.,* Note, "The Essence of the Agent Orange Litigation: The Government Contract Defense," 12 Hofstra L.Rev. 983 (1984). Yet the defense remains the law of the case. *See In re "Agent Orange" Product Liability Litigation,* 534 F.Supp. 1046, 1056-58 (E.D.N.Y.1982); *In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 795-99, 843-50 (E.D.N.Y. 1984).

It is clear from the record, in light of all the information received to date, that the government knew as much as, or more than, the defendant chemical companies about the possible adverse health effects of Agent Orange as it was used in Vietnam. There is no substantial basis for believing that further discovery will reveal any persuasive information on this subject. *Id.* at 795-99.

The information available makes it clear that the government would have concluded that the beneficial saving of American soldiers' lives by defoliating the Viet-

namese jungles far outweighed any minimal risks to our own or allied troops posed by exposure to Agent Orange. Such a governmental decision falls within the discretionary function exception to liabililty under the Federal Tort Claims Act. *Dalehite v. United States,* 346 U.S. 15, 35-36, 73 S.Ct. 956, 968, 97 L.Ed. 1427 (1953) (Texas City Disaster); *see also* Huber, "Safety and the Second Best: The Hazards of Public Risk Management in the Courts," 85 Colum.L. Rev. 277 (1985) (arguing that all technological innovation beneficial to the public involves private risk; courts should defer to agency expertise in determining whether the risk outweighs the benefit).

V. CONCLUSION

The cases of the veterans and any other members of the class who opted out of the class are dismissed. In view of this disposition, there is no need to consider plaintiffs' cross-motion for summary judgment.

This memorandum constitutes a final judgment. The Clerk of the Court will provide counsel with copies.

SO ORDERED.

APPENDIX "A"

ATTORNEY'S AFFIDAVIT

Comes now the affiant, John E. Sutter, and hereby states under penalty of perjury that he has personal knowledge of the matters stated herein and is competent to testify to the same. The information contained in this affidavit was obtained through a review of the veteran's military and medical records as well as his personal statements to me. I have been retained by the veteran to represent him in regard to his Agent Orange exposure.

Veteran's name: Ronald C. Thaxton
Address: 12408 Applecross Drive
Clinton, Maryland 20735

The veteran served in Vietnam from January, 1968 to November, 1968.

The veteran was exposed to Agent Orange. He was sprayed with Agent Orange, saw spraying of Agent Orange, entered defoliated areas and consumed local food and water.

As a result of his exposure to Agent Orange he is suffering from the symptoms checked on the attached list.

To the best of my knowledge and belief, the veteran did not have the aforementioned symptoms and medical problems until after his exposure to Agent Orange.

I am unaware of any cause other than the veteran's exposure to Agent Orange for the aforementioned symptoms and medical problems.

To the best of my current knowledge and belief there is no history in the veteran's family of the symptoms and medical problems from which the veteran suffers as a result of his exposure to Agent Orange.

The veteran does smoke cigarettes.

It is unknown whether the veteran drinks any alcoholic beverages.

To the best of my knowledge and belief, the veteran has not been exposed to any abnormal environmental pollutants, toxic chemicals other than Agent Orange or radiation where he worked, lived or places that he has traveled.

The veteran has taken no abnormal medications.

It is unknown whether the veteran has taken any prescription medication.

It is unknown whether the veteran has taken controlled substances.

It is unknown whether the veteran has ever suffered from liver problems.

The veteran has not suffered from:

a. goiter
b. diabetes
c. malaria
d. venereal disease

The veteran has opted out of the class action and wishes to pursue an individual lawsuit. He believes he is entitled to his day in court to have a jury determine the merits of his claims. This case has been brought in the utmost good faith.

Further saith the affiant not.

/s/ John E. Sutter
John E. Sutter

1-16-85
Date

CHECKLIST

Symptomology

	Yes	*No*
Fatigue	—	—
Headaches	—	—
Night Sweats	—	—
Fainting Spells	—	—
Hearing Problems	—	—
Loss of Smell	—	—
Inability to Taste	—	—
Dramatic Weight Loss (Unexplained)	—	—
Loss of Appetite	—	—
Reduced Tolerance to Alcohol	—	—
Sore Throats/Glandular Swelling	—	—
Sinus/Allergy	—	—
Spontaneous Nosebleeds	—	—
Kidney or Liver Disorders	—	—
Change in Urine Color	—	—
Dramatic Change in Bowel Habits	—	—
Respiratory Problems	—	—
Pounding in Chest	—	—
Hair Loss	—	—
Loss or Change in Toenails	—	—
Loss or Change in Fingernails	—	—
Skin:		
Rash	—	—
Blisters	—	—
Acne	—	—
Spotty Tanning	—	—
Discoloration	—	—
Peeling	—	—
Increased Sensitivity to Sunlight	—	—
Skeletal-Muscular Disfunction:		
Numbness and Tingling	—	—
Swelling	—	—
Unusual Stiffness in Joints	—	—
Tightening of Muscles	—	—
Chest Pain	—	—
Lower Back Pain	—	—

Gastro-Intestinal Disorders:

Stomach or Abdominal Cramps	—	—
Difficulty in Digestion	—	—

Vision Difficulties:

Light Sensitivy	—	—
Change in Vision	—	—

Tumors:

Non-malignant	—	—
Malignant	—	—

Behavior:

Memory Loss	—	—
Increased Irritability	—	—
Increased Anger	—	—
Increased Anxiety	—	—
Sleep Patter [sic] Disruption/Insomnia	—	—
Aggression	—	—
Confusion	—	—
Depression	—	—
Tremors	—	—

List any other problems you have had since exposure:

Children:

Miscarriages	—	—
Stillbirths	—	—
Spontaneous Abortions	—	—
Respiratory Problems	—	—
Fevers of Short Duration	—	—
Rashes	—	—
Allergies	—	—
Speech Deficiencies	—	—
Heart Murmurs	—	—
Learning Disabilities	—	—
Birth Defects	—	—

List any other problems you or your children have experienced since exposure.

General Medical Information

	Yes	No
Do you smoke?	—	—
Are you on any medication?	—	—
Have you had any operations?	—	—
Have you ever had the following:		
Sickle Cell Anemia	—	—
Epilepsy	—	—
Venereal Disease	—	—
Hepatitis	—	—
Goiter	—	—
Heart Disease	—	—
High Blood Pressure	—	—
Diabetes	—	—
Malaria – If so, have you taken DAPSONE (a small white pill taken every morning?)	—	—

In re "AGENT ORANGE" PRODUCT LIABILITY LITIGATION.

Anna M. LILLEY, Surviving wife of John Lilley, John W., Jeannie D., Thomas R., Debbie L. and Ward C. Lilley, all minor children of John Lilley, deceased by Anna M. Lilley, their mother and next friend, Plaintiffs,

v.

DOW CHEMICAL COMPANY, Monsanto Company, Hercules Incorporated, Diamond Shamrock Corporation, Thompson Hayward Chemical Company, North American Phillips Corporation and Uniroyal Merchandising Company, Defendants.

MDL No. 381, CV-80-2284.

United States District Court,
E.D. New York.

July 3, 1985.

Robert C. Taylor, Jr., Ashcraft & Gerel, Washington, D.C., for plaintiffs.

Leonard Rivkin, Rivkin, Leff, Sherman & Radler, Garden City, N.Y.; Philip Pakula, Townley & Updike, Wendell B. Alcorn, Jr., Cadwalader, Wickersham & Taft, William Krohley, Kelley, Drye & Warren, Thomas Beck, Arthur, Dry & Kalish, Bruce Hecker, Shea & Gould, New York City, N.Y., of counsel; David R. Gross, Budd, Larner, Kent, Gross, Picillo & Rosenbaum, New York City, N.Y.; Paul V. Esposito, Lewis, Overbeck & Furman, Chicago, Ill.; Henry G. Miller, Clark, Gagliardi & Miller, White Plains, N.Y., for defendants.

Arvin Maskin, Dept. of Justice, Washington, D.C., for third-party defendant U.S.

MEMORANDUM, ORDER, and JUDGMENT

WEINSTEIN, Chief Judge:

Anna Lilley sues on behalf of her deceased husband John Lilley, a Vietnam veteran. (The Lilleys are sometimes individually and jointly referred to as "plaintiff."). Defendants are seven chemical companies that manufactured the herbicide Agent Orange for use in Vietnam. They have moved to dismiss and for summary judgement. As in the cases of the other veterans who opted out of the class, summary judgment of dismissal must be granted. *See In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223 (E.D.N.Y. 1985).

1. INTRODUCTION

Based on all the information available in this case and in the related MDL litigation, we can assume that plaintiff might establish that the government as well as the defendant chemical companies knew that Agent Orange contained dioxin. The government and defendants undoubtedly knew before the spraying began that dioxin was a highly toxic chemical that might pose dangers to those exposed. Plaintiff can probably show that defendants knew that Agent Orange was to be sprayed in higher concentrations than recommended by the manufacturers for safe commercial use of similar herbicides, creating additional dangers to those on the ground. Plaintiff could also convince a trier that defendants were aware that packaging Agent Orange in drums without warnings was likely to lead to handling in ways contrary to safe usage, such as spillage on personnel and failure to wash and change clothing promptly after exposure.

There is also reason to believe that plaintiff could adduce evidence lending support to a contention that neither the government nor the chemical companies met a responsibility to conduct proper experiments and tests before production and use, to reveal promptly the dangers and to take adequate precautions by warnings and the like. In this respect the case arguably resembles the asbestos litigation where substantial contentions of cover-up and carelessness have been made. *See* P. Brodeur, "Annals of Law – Asbestos," *The New Yorker* (June 10, 17, 24, July 1, 1985).

Finally, on the basis of the record, there is evidence of plaintiff's exposure to Agent Orange. It occurred while he was in Vietnam.

Thus plaintiff could establish enough to withstand a motion for summary judgment directed to the first leg of any tort claim – defendants' wrongful act violating a right of plaintiff. Whether the rule is couched in terms of traditional negligence or strict liability we may assume for the purposes of this motion that defendants violated an obligation they owed to plaintiff.

Plaintiff's difficulty is with establishing the second leg of a tort claim – damage to plaintiff caused by defendants' wrongful conduct. Causation cannot be established on the basis of information presently available. It cannot be shown that John Lilley's illness and death were caused by exposure to Agent Orange. On the evidence available no trier could be permitted to find for plaintiff. At this point any analogy to many of the asbestos or other similar toxic tort cases – where there is a clear linkage between the product and a disease – ends.

Under these circumstances, there is no need to consider whether the risks to those on the ground from spraying

would have been greater than the risks from ambushes or other enemy action had Agent Orange never been used. Speculation about what the President and other high government officials would have done if they had known of the possible dangers, or what the manufacturers would or should have done if the government ordered the spraying of Agent Orange with full knowledge, becomes legally irrelevant.

Although lack of proof of causation requires that the complaint be dismissed, attorneys for plaintiffs in this and related MDL cases did not bring a frivolous suit requiring them to pay defendants' attorneys fees under Rule 11 of the Federal Rules of Civil Procedure. *See Eastway v. City of New York,* 762 F.2d 243 (2d Cir. 1985). The plaintiffs' attorneys in this multidistrict litigation have made a valuable contribution by discovering and revealing evidence supporting the first leg of their claim – defendants' and the government's knowledge of the dangers in using Agent Orange and their failure to take reasonable precautions. That the scientific studies completed after they brought suit failed to support their theories of causation is hardly a reason for punishing the lawyers.

As a result of this litigation, future members of the armed forces may be protected by "sunshine" legislation, Defense Department regulations and manufacturers' practice requiring disclosure of new and dangerous chemical processes. The importance of this and related Agent Orange litigation to veterans and to the public argues strongly against denominating the complaint in this case frivolous and burdening counsel with Rule 11 sanctions.

A long latency period may ultimately reveal some causal relationship between exposure to Agent Orange and adverse health effects in those exposed and in their

children. If and when such a connection is shown the issue of compensation should be addressed by the government. This court must decide the case on the evidence presently available.

II. PROCEDURAL BACKGROUND

Plaintiff opted out of the class previously certified by this court in a suit against the defendant chemical companies. *In re "Agent Orange" Product Liability Litigation,* 506 F.Supp. 762, 787-792 (E.D.N.Y. 1980), *modified,* 100 F.R.D. 718 (E.D.N.Y. 1983), *mandamus denied,* 725 F.2d 858 (2d Cir.), *cert. denied,* ____U.S.____, 104 S.Ct. 1417, 79 LEd.2d 743 (1984). After settling with members of the class on May 7, 1984, defendants moved on July 24, 1984 for summary judgment in the opt-out cases and a number of cases brought by civilians.

The court granted the opt-out plaintiffs repeated adjournments and opportunities for discovery to obtain evidence in opposition to the motion. On December 10, 1984, the court heard oral argument on defendants' motions. Defendants offered overwhelming proof that no causal connection exists between exposure to Agent Orange and development of miscarriages or birth defects. In response, the veterans wives and children produced no evidence sufficient to create an issue of material fact on causation. *See also In re "Agent Orange" Product Liability Litigation,* 603 F.Supp. 239 (E.D.N.Y. 1985) (dismissing claims of wives and children against government). The court adjourned consideration of the majority of the opt-out veterans' claims to enable counsel to produce additional evidence of causation.

Counsel for the opt-out plaintiffs submitted materials by Doctors Samuel S. Epstein and Barry M. Singer. Oral

argument was heard on April 15, 1985. The court issued an opinion granting defendants' motion for summary judgment on May 8, 1985. In re "Agent Orange" Product Liability Litigation, 611 F.Supp. 1223 (E.D.N.Y. 1985).

In the *Lilley* case, plaintiff produced the affidavit of Dr. Bertram Warren Carnow on October 18, 1984. On December 10, 1984, the court denied summary judgment. Defendants' motion to reargue was granted on February 6, 1985. Expedited discovery occurred and oral argument was heard on April 1, 1985.

On May 14, 1985, the court issued an order granting plaintiff an added thirty days to submit additional proof of exposure and additional medical evidence. Plaintiffs' counsel submitted the affidavit of Mrs. Lilley's brother-in-law John Comeaux on June 12, 1985. Defendants' counsel submitted John Comeaux's supplemental affidavit and an accompanying memorandum of law on June 13, 1985.

III. Facts

More discovery has occurred in the *Lilley* case than in any other opt-out case. Still, as the deposition of plaintiff Anna Lilley demonstrates, little is known about John Lilley's medical background and exposure history. Plaintiff's expert, Dr. Bertram Carnow, relies on information supplied by Mrs. Lilley, some of Mr. Lilley's medical records, and studies of animal and industrial exposure to dioxin. He concludes that Agent Orange caused John Lilley's illness and death. Defendants contest causation, relying primarily on epidemiologic studies, the depositions of Mrs. Lilley, the affidavits of John Comeaux and the affidavits of two experts.

A. *Information on John Lilley*

John Lilley grew up in western Pennsylvania. He entered what subsequently became the Air Force in 1947 at the age of seventeen. According to Mrs. Lilley, her husband received specialized training in the use of chemicals and gas and instruction on how to be an airplane mechanic. Dep. of Anna Lilley at 81. During his years in the service, John Lilley worked primarily as an airplane mechanic. *Id.* at 36, 57. He "tore engines apart." *Id.* at 83. Mr. Lilley's main work place was Andrews Air Force Base, and he commuted home on weekends. *Id.* at 51, 54, 58.

He had several tours of duty abroad, including service in Germany, England, Japan, Korea and Vietnam. He worked as a cargo inspector in Vietnam from April 1966 through April 1967. There he inventoried cargo and assisted in loading and unloading it onto airplanes.

Dr. Carnow states that Mr. Lilley "was not exposed to any spraying nor did he handle any chemicals" other than in Vietnam. Carnow Aff. at 2. Mrs. Lilley's deposition makes clear that she would not have been aware of her husband's exposure to chemicals. *See generally* Lilley Dep. at 85 & *passim*. According to Mrs. Lilley, whatever John Lilley's assignment, "he would be * * * on top secret * * * [and] never knew where he was going until he boarded the plane and opened the envelope." *Id.* at 47.

Dr. Carnow also states that Mr. Lilley told Mrs. Lilley "that he did handle some drums of Agent Orange extensively and that he did get some of the chemical on him from ruptured or defective containers." Mrs. Lilley, on the other hand, repeatedly stated that "he could never tell me what was in the containers." *Id.* at 36; *see also id.* at 42, 44, 161.

Mrs. Lilley testified at her deposition that she first learned that Agent Orange may have been in the containers her husband handled sometime after his death. She was told this by her brother-in-law, who had worked with John Lilley in Vietnam. *Id.* at 41-42. There are indications in Mrs. Lilley's deposition that the chemicals handled by her husband and brother-in-law included chemicals other than Agent Orange. *See, e.g., id.* at 45 ("[t]he boys never knew what they were handling, all they knew it was chemicals * * * supposed to kill the mosquitos or something over there"); *id.* (describing "red, green, blue" seals on barrels); *id.* at 161 ("chemicals my husband [used] * * * to spray for the bugs").

The affidavit of Mrs. Lilley's brother-in-law, John C. Comeaux, is more explicit about the material John Lilley handled in Vietnam. Mr. Comeaux served as a flight engineer and cargo inspector in Vietnam, frequently working with John Lilley. Comeaux Aff. ¶¶ 5-7.

Mr. Comeaux "cannot clearly recall the color of the various bands used" on the barrels he and Mr. Lilley handled. They emptied the 55-gallon drums into larger aircraft tanks for use on C-123 aircraft as part of Operation Ranch Hand. Aff. ¶7. The material in the drums, which Mr. Comeaux "understood * * * to be for defoliating the jungle, killing the tall grasses and occasionally for destroying enemy crops," "was constantly spilling" on Mr. Comeaux and Mr. Lilley. Aff. ¶¶ 7-8. A film of what Mr. Comeaux believes to have been Agent Orange developed on the water when it rained. Rainwater flooded the barracks and Mr. Lilley and Mr. Comaux were forced to wade in it. Aff. ¶ 7. Mr. Comeaux concludes that "John Lilley was exposed to Agent Orange *and possibly other herbicides.*" Aff. ¶ 10 (emphasis supplied).

John Comeaux's supplemental affidavit filed at the request of defendant Monsanto states that he has "no personal knowledge of the contents of the barrels we handled" and that he does "not know * * * whether the barrels in fact contained the herbicide known as Agent Orange." Supp. Aff. ¶¶ 3-5.

Dr. Carnow notes that after returning from Vietnam, Mr. Lilley had blister-like lesions on both lower legs which were then diagnosed as shingles. He also complained of a red rash which would later result in brownish patches on his skin. Carnow Aff. at 2; *see also* Dep. of Anna Lilley at 27. He had difficulty holding a hammer because of numbness in his hands. Finally, he had a cough and sore throat, which were apparently cured by a tonsillectomy. *Id.* at 64.

Mr. Lilley retired from the Air Force after twenty years of service in August 1967. Upon returning to civilian life he worked for Aircraft Armaments Company, a manufacturer of grenades, machine guns and shells. Lilley Dep. at 62-63. Dr. Carnow states that during his subsequent occupation, Mr. Lilley "never handled any toxic chemicals including solvents or pesticides." Carnow Aff. at 2. This conclusion is presumably based on Mrs. Lilley's statement that "[t]hey didn't have chemicals down there." Lilley Dep. at 63. While employed at Aircraft Armaments, Mr. Lilley replaced light bulbs and fixed air conditioners.

With respect to Mr. Lilley's personal habits, Dr. Carnow states that, according to Mrs. Lilley, Mr. Lilley did not smoke or drink. Aff. at 2. Mrs. Lilley's deposition reads:

> Q: At any time since you have known your husband, did he ever smoke?
>
> A: Well, I don't know what he did. He started one time and went back off of it and broke himself of it.

Q. Was he ever advised by a doctor in the military to stop smoking?

A: I don't know. He never told me.

Dep. at 98. Mr. Lilley, however, "admitted to smoking 1 pack per day for the last 30 years * * *." Medical Record, USPHS Hospital (12/10/70) submitted as Exhibit "B" to Aff. of Edmund H. Sonnenblick, M.D., In Support of Defendant's Motion to Dismiss and for Summary Judgment.

Dr. Carnow also relies on information from Mrs. Lilley to conclude that Mr. Lilley never contracted hepatitis or infectious mononucleosis and did not take any medication regularly. Carnow Aff. at 2. She gave Dr. Carnow an abbreviated family history: Mr. Lilley's father died of a stroke in his 50s or 60s. His mother had cancer of the uterus or cervix. He has five sisters, all of whom are alive and well. There is no history of any leukemias or other cancers in the family. Aff. at 3.

Mrs. Lilley notes that she had a stillbirth after five months' gestation in 1969. She became pregnant again several months later and after a full-term pregnancy gave birth to an eight pound, five ounce baby. The boy has developed rashes on about 13 occasions, diagnosed as Scarlet Fever, German Measles, and other infectious diseases. The child also suffers from a lung disorder. Aff. at 3.

After Mr. Lilley's return from Vietnam, he received medical attention twice: once in April 1966 for a boil on his scrotum, and once for a sore throat in May 1967. His retirement examination in August 1967 showed a normal electrocardiogram, no significant findings on the physical examination, and no complaints. He was 6 feet tall and weighed 180 pounds. His blood pressure was 120/84 and he was thought to be in excellent health. Aff. at 3.

In September 1970 at the age of 40, Mr. Lilley was diagnosed as having poorly differentiated lymphocytic lymphoma, nodular type. He was treated with various medications and told that he had only six months to live — although fortunately he lived longer. Carnow Aff. at 3. He had a spleenectomy in 1970 after the diagnosis of lymphosarcoma was made.

Dr. Carnow notes that the progression of Mr. Lilley's disease was from poorly differentiated lymphocytic lymphoma, nodular tyupe, to mixed histiocytic-lympocytic, nodular type, to lymphosarcomatous leukemia. Aff. at 3. Mr. Lilley died on January 28, 1976. According to Dr. Carnow, the autopsy report shows a lymphosarcomatous leukemia with various other findings, all related to the cancer diagnosis. Aff. at 3.

A hospital discharge summary dated February 17, 1975 shows that Mr. Lilley had just suffered a myocardial infarction. He had had a previous myocardial infarction in 1973. Dr. Carnow concludes that Mr. Lilley's lymphosarcoma was caused by exposure to Agent Orange during his tour of duty in Vietnam. He further states that John Lilley's myocardial infarction "was also the result of absorption of these chemicals into his body and the development of chronic chemical intoxication as a result." Carnow Aff. at 5. *Cf.* Tr. at 183 (Hearings March 5, 1985) ("medical evidence would suggest that if somebody had occluded arteries, that person did not die from Agent Orange exposure") (remarks of Plaintiffs' Management Committee member David Dean).

Assuming, based on the Comeaux affidavits, that Mr. Lilley was in fact exposed to Agent Orange, there is insufficient evidence to support Dr. Carnow's opinion that such exposure caused Mr. Lilley's lymphosarcoma and myocar-

dial infarctions. Dr. Carnow relies on insufficient information about Mr. Lilley's background and personal habits. What little information is available makes clear that Mr. Lilley was exposed to a wide variety of carcinogens during his lifetime. The only medical records submitted make no mention of Agent Orange. The inapposite scientific studies described by Dr. Carnow do not support the claim of causation.

B. *Review of Scientific Literature*

To reach his conclusion that Agent Orange caused Mr. Lilley's lymphosarcoma and myocardial infarctions, Dr. Carnow relies primarily on a number of studies conducted on animals and workers exposed to dioxin.

1. *Studies Relied Upon by Dr. Carnow*

These studies, previously submitted by plaintiffs, have been dismissed in the court's prior opt-out opinion. *In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223 (E.D.N.Y.1985). Many of the studies involved laboratory animals subjected to extreme exposures with unknown human significance; some, such as the Swedish studies by Hardell and his colleagues, have never been replicated, and involved chemicals in addition to the constituents of Agent Orange. *See, e.g.,* L. Hardell, *et al.,* "Malignant Lymphoma and Exposure to Chemicals, Especiallly Organic Solvents, Chlorophenols and Phenoxy Acids: A Case-Control Study," Br. J. Cancer (1981), Ex. 66 to Plaintiffs' Supplemental Memorandum in Support of Plaintiffs' Opposition to Defendant's Motion for Summary Judgment. Others involved chronic or acute industrial exposures different from the exposures in Vietnam.

The studies cited by Dr. Carnow do not establish any cause and effect relationship. For example, Dr. Carnow relies heavily on three anmial studies – Van Miller, Lalich, *et al.*, 1977, Kociba, *et al.*, 1978, and Toth *et al.*, 1979 – that he states "have demonstrated the carcinogenicity of TCDD in rats and mice." Carnow Aff. at 5. The Van Miller study, however, concludes that more research is necessary into the mechanisms of TCDD's action before any conclusions can be drawn as to the carcinogenity of TCDD even in laboratory animals. *See* Van Miller, et al., "Increased Incidence of Neoplasms in Rates Exposed to Low Levels of 2,3,7,8-Tetrachlordibenzo-p-Dioxin," 9 Chemosphere 537, 543 (1979), Ex. 5 to Plaintiffs' Supplemental Memorandum.

As the Toth study concludes, the results of animal studies cannot be extrapolated to humans:

> Until more is known about the people who have been exposed to them, the carcinogenicity of 2,4,5-T and structurally related chemicals in humans cannot be evaluated.

Toth, *et al.*, "Carcinogenicity testing of herbicide 2,4,5-trichlorophenoxyethanol containing dioxin and of pure dioxin in Swiss mice" 549 (1979), Ex. 7 to Plaintiffs' Supplemental Memorandum. *See also* Hall & Silbergeld, "Reappraising Epidemiology: A Response to Mr. Dore," 7 Harv.Envtl.L. Rev. 441, 442-43 & n. 18 (1983) (laboratory animal studies less persuasive than epidemiological studies).

In the Kociba study, neoplasms were found only in those animals fed sufficient quantities of the chemical to cause severe, acute toxic effects. The study concluded:

> In summary, data collected in the study reported herein indicate that doses sufficient to

> induce severe toxicity increased the incidence of some types of neoplasms in rats, while reducing the incidence of other types. No increase in neoplasms occurred in rats receiving sufficient TCDD during the 2-year study to induce slight or no manifestation of toxicity.

Kociba, *et al.*, "Results of a Two-Year Chronic Toxicity and Oncogenicity Study of 2-3-7-8-Tetrachlorodibenzo-p-Dioxin in Rats," 46 Toxicology and Applied Pharmacology 279, 302 (1978), Ex. 3 to Plaintiffs' Supplemental Memorandum.

Dr. Carnow's discussion of human studies avoids any mention of the epidemiologic studies conducted on Vietnam Veterans actually exposed to Agent Orange and their offspring. Instead, he relies on studies involving industrial exposure, small cohorts and different chemical compounds. He does mention Sarma and Jacobs, who reported in 1981 three cases of soft-tissue sarcomas in veterans presumed to have been exposed to Agent Orange. Sarma and Jacobs concluded that more studies are needed:

> Soft-tissue sarcomas are rare neoplasms. If there is a true risk of these neoplasms in veterans who served in Vietnam, follow-up studies should be able to define it. If there is an increased risk of malignant disease in these veterans, then a more critical question that has to be addressed is: Are the defoliants causative, or is some other unidentified enviromental factor responsible, acting alone or in concert with the defoliants?

Sarma and Jacobs, "Thoracic Soft-Tissue Sarcoma in Vietnam Veterans Exposed to Agent Orange" 1109 (letter to the editor), Ex. 79 to Plaintiffs' Supplemental Memorandum.

Dr. Carnow also cites a number of studies involving occupational exposures. He refers to four cases of soft-tissue sarcomas reported by Honchar and Halperin in 2,4,5-T workers and three additional cases reported subsequently. He fails to mention the later findings that of these seven cases, three had no known exposure to chlorophenols and two others were not soft-tissue sarcomas at all, but rather more common carcinomas. Thus, only two of the original seven cases of soft-tissue sarcomas remained after reevaluation. They had no statistical significance. *See* Fingerhut, *et al.*, "Review of Exposure and Pathology Data for Seven Cases Reported as Soft Tissue Sarcoma Among Persons Occupationally Exposed to Dioxin-Contaminated Herbicides," Exhibit 2 to Defendants' Supplemental Memorandum in Support of Motion to Dismiss And/Or for Summary Judgment.

The Swedish soft-tissue studies cited by Dr. Carnow – Eriksson, *et al.* 1979; Hardell, *et al.* 1981 – involved exposure levels different from those at issue in this case. The Eriksson study concludes that:

> exposure to phenoxy acids *may* constitute a risk factor in the development of malignant mesenchymal tumors of the soft tissue, and . . . the risk is not limited to 2,4,5-trichlorophenoxy acids which, like certain chlorophenols, may contain polychlorinated dibenzodioxions and dibenzofurans, but also to other phenoxy acids.

Eriksson, *et al.*, "Case Control Study on Malignant Tumors of the Soft Tissue and Exposure to Chemical Substances," 76 Lakartidningen 18, Ex. 64 to Plaintiffs' Suppelmental Memorandum (emphasis supplied). The Hardell study acknowledges:

> There are no epidemiological or other reports that have firmly established a correlation between cancer and previous exposure to phenoxyacetic acids in human beings.

Hardell, *et a.*, "Case-Control Study: Soft-Tissue Sarcomas and Exposure to Phenoxyacetic Acids or Chlorophenols," 39 Br. J. Cancer 711, 711 (1979), Ex. 63 to Plaintiff's Supplemental Memorandum. These Swedish studies have not been replicated by other investigators. One court has explicitly found the Hardell studies flawed. *See, e.g., Palmer v. Nova Scotia Frost Industries,* 60 N.S.R. (2d 271, 352-53, 2 D.L.R. (4th) 397 (1983).

The follow-up studies of the BASF accident similarly are not evidence of any causal relationship between exposure to dioxin and stomach cancer.

> There is a possibility that some members of the BASF cohort were exposed to other unknown occupational hazards before or after the dioxin accident. . . . Because of the small size of the cohort and the small absolute number of deaths from any particular cause, *the results of this study do not permit any definite conclusions concerning the carcinogenic effect of dioxin exposure.*

Thiess, Frentzel-Beyme and Link, "Mortality Study of Persons Exposed to Dioxin in a Trichlorophenol-Process Accident that Occurred in the BASF AG on November 17, 1953," 3 Am.J. Industrial Medicine 179, 188 (1982), Ex. 71 to Plaintiffs' Supplemental Memorandum (emphasis supplied).

The Hardell lymphoma studies also fail to establish any causation. Hardell's 1979 letter in *Lancet* concludes:

> *Proof* of a relation between malignant lymphoma of histiocytic type and exposure to phenoxyacetic acids or chlorophenols or any comment on the possible mode of action of these chemicals and their impurities *must await epidemiological* and immunological *studies* of malignant lymphoma.

Hardell, "Malignant Lymphoma of Histiocyctic Type and Exposure to Phenoxyacetic Acids or Chlorophenols," *The Lancet* 55, 56 (Jan. 6, 1979), Ex. 65 to Plaintiffs' Supplemental Memorandum (emphasis supplied). The subsequent study by Hardell does not provide such proof. The conclusion is:

> As regards the *present investigation,* it *suggests,* in summary, that exposure to organic solvents, chlorophenols and/or phenoxy acids constitutes a risk factor for the incidence of malignant lymphoma. *The mechanism* of this *is unclear,* although a conceivable mode of action may consist, for example, of immunologic depression, which is described for dioxins, especially TCDD, or mutagenic effects by phenoxy acids which were demonstrated in some test systems. . . .

Hardell, *et al.,* "Malignant Lymphoma and Exposure to Chemical Substances, Especially Organic Solvents, Chlorophenols and Phenoxy Acids" 15, Ex. 66 to Plaintiffs' Supplemental Memorandum (emphasis supplied).

Nor do the Bishop and Jones or Olsson and Brandt studies provide such proof. Bishop and Jones found two cases of lymphoma of the scalp among 158 workers who were exposed to pentachlorophenol containing hexachloro and octachloro dibenzodioxins, but who were also exposed "to other chemicals including *aromatic hydrocarbons, among them benzene.*" Bishop & Jones, "Non-Hodgkin's

Lymphoma of the Scalp in Workers Exposed to Dioxins," *The Lancet* 369 (Aug. 15, 1981), Ex. 72 to Plaintiffs' Supplemental Memorandum (emphasis supplied). Olsson and Brandt noted five cases of lymphomas of the skin among 123 males suffering from non-Hodgkin's lymphoma. Four of these five, but only seven of the remaining 118, reported exposures to herbicides containing phenoxy acids. The authors then speculated about the skin cancers only:

> Phenoxy acids are chemically related to chlorophenols and our results, together with the observations of Bishop and Jones, *may suggest* a relation between cutaneous presentation of [non-Hodgkin's lymphoma] and occupational exposure to this type of chemical. Like chlorophenols, phenoxy acids may be contaminated by dioxins and it is also possible that exposure to such impurities is relevant to the findings made by Bishop and Jones and by us.

Olsson & Brandt, "Non-Hodgkin's Lymphoma of the Skin and Occupational Exposure to Herbicides," *The Lancet* 579 (Sept. 12, 1981) (emphasis supplied), Ex. 70 to Plaintiffs' Supplemental Memorandum.

In sum, the various studies discussed by Dr. Carnow do not support his firm conclusion that exposure to Agent Orange caused John Lilley's lymphosarcoma. The authors of these studies acknowledge that more research is necessary and that no more than a suggestion or vague association may be hypothesized at present. Dr. Carnow does not discuss the directly relevant epidemiologic studies conducted on exposed Vietnam veterans.

2. *Studies of Relevant Population Group*

The epidemiologic studies conducted on veterans exposed to Agent Orange in Vietnam have been extensively discussed in prior opinions. *See, e.g., In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740 (E.D.N.Y. 1984) (fairness of settlement); *In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223 (E.D.N.Y. 1985) (granting summary judgment against plaintiffs who opted out of the class action). This research was designed to determine the direct effects of exposure on servicepersons and the indirect effects of exposure on spouses and children of servicepersons. No acceptable study to date of Vietnam veterans and their families concludes that there is a causal connection between exposure to Agent Orange and the serious adverse effects claimed by plaintiff.

Chloracne and porphyria cutanea tarda are the only two diseases that have been recognized by Congress as having some possible connection to Agent Orange exposure. Arguably there has been some proof that this plaintiff suffered from chloracne on his return from Vietnam. *But see In re "Agent Orcnge" Product Liability Litigation,* 597 F.Supp. 740, 856 (E.D.N.Y.1984) (of all Vietnam veterans, no chloracne and two porphyria cutanea tarda cases are recognized as having a connection with Vietnam, but not necessarily with Agent Orange); Veterans Administration, Adjudication of Claims Based on Exposure to Dioxin and Iionizing Radiation, 50 Fed.Reg. 15848, 15849-50 (April 22, 1985). This is, however, a death action and chloracne has not been claimed to be a precursor of the cancer and heart disease from which plaintiff allegedly died. At most it is evidence of exposure to Agent Orange, a fact that may be assumed for purposes of this motion.

The studies have been negative with respect to effects on veterans' health. The Air Force study is one of the most intensive examinations to date of the effect of Agent Orange on exposed veterans. *See* Air Force Health Study, *An Epidemiologic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides* (February 24, 1984) (Ranch Hand II Study – 1984 Report). This study utilized 1,024 matched pairs of men for analysis. *Id.* at v. Essentialy all those who had participated in the fixed wing spraying and who could be located were studied. The conclusion was negative. In summary,

> This baseline report concludes that there is insufficient evidence to support a cause and effect relationship between herbicide exposure and adverse health in the Ranch Hand group at this time.

Id. at iii. Significantly, "no cases of chloracne were diagnosed clinically or by biopsy." *Id.* at iii, XV-9.

The small Ranch Hand sample and other factors, particularly the length of time it takes for some cancers to develop, support the conclusion that more work is needed before any firm conclusion can be reached respecting morbidity. *Id.* at v. The authors suggest a 20-year mortality followup study. *Id.* at v., XVIII-1-3.

The Ranch Hand Study authors state that "[i]n full context, the baseline study results should be viewed as reassuring to the Ranch Handers and their families at this time." *Id.* at iii; *see also id.* at XIV-4 to XIX-9. Even if we assume that plaintiff was part of the Ranch Hand operation, this study offers no help to him in establishing causation. It is at best inconclusive. *See In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 788 (E.D. N.Y.1984).

Other studies of the relevant population group fail to establish a causal connection between exposure to Agent Orange and development of the diseases that afflicted John Lilley. *See, e.g.,* Agent Orange Advisory Committee to the Texas Department of Health, Guy R. Newell Chairman, *Development and Preliminary Results of Pilot Clinical Studies* 13, 15-19 (March 26, 1984); Lawrence, *et al., Mortality Patterns of New York State Vietnam Veterans,* 75 AJPH 277, 279 (1985). The comprehensive three-part Australian study is similarly negative. Australian Veterans Health Studies, *The Mortality Report* (1984). A comprehensive study by the Centers for Disease Control may be available after mid-1989. *See* Centers for Disease Control, *Protocol for Epidemiologic Studies of the Health of Vietnam Veterans* (November 1983); *but cf.* McIntyre, "End to Dioxin Study Fund Asked," *Newsday,* May 1, 1985, at 25, col. 1 (White House scientist Alvin L. Young, a toxicologist, recommends that no further research on Agent Orange should be funded "because research has failed to show it causes cancer or birth defects in humans").

C. *Expert Affidavits Submitted by Defendants*

In support of their motion for summary judgment, defendants submitted affidavits from Dr. Edmund H. Sonnenblick and Dr. Edward A. Smuckler. Dr. Sonnenblick, who is Chief of the Cardiology Department at Albert Einstein Medical School, addresses the question of whether John Lilley's myocardial infarctions resulted from exposure to Agent Orange.

A review of Mr. Lilley's medical records, Dr. Carnow's testimony and sources, and the scientific literature convinces him that the infarction was unrelated to Agent Orange. John Lilley was a member of an age, race and sex

group that was at risk for myocardial infarction. Sonnenblock Aff. ¶ 9. In addition, John Lilley's medical history includes several known risk factors for myocardial infarction: a 30-year history of cigarette smoking, hyperchloresterolemia, and parental stroke. ¶¶ 18-20. Even Dr. Carnow acknowledges that these factors may enhance the risk of heart disease, Carnow Dep. at 36.

Dr. Sonneblick notes that no scientific study has found an association between coronary artery disease and exposure to Agent Oragne, 2,3,7-8-tetrachlordibenzo-p-dioxin or any other form of dioxin. Aff. ¶ 13. According to Dr. Sonnenblick, the "list of scientific materials which support the opinions of plaintiffs' experts" does not include any reference to literature that addresses this purported association. Aff. ¶ 12. The Ranch Hand Mortality and Morbidity Studies did not find any increased incidence of coronary artery disease or myocardial infarction among persons exposed to Agent Orange in Vietnam. Aff. ¶ 14.

Dr. Sonnenblick states that:

> "[w]ithout studies demonstrating an excess incidence of myocardial infarction among persons in John Lilley's age group who were exposed to Agent Orange, there is no basis for the opinion that John Lilley's myocardial infarction was more probably than not caused by his exposure to Agent Orange, since there would be no basis for distinguishing his condition from the "background" incidence of such disease."

Aff. ¶ 16. Given the lack of an increased incidence of heart disease in veterans exposed to Agent Orange and the existence of risk factors in John Lilley's own background, Dr. Sonnenblick concludes that Dr. Carnow's opinion lacks any "scientific, factual or logical basis." Aff. ¶ 22.

Dr. Smuckler addresses the claim that Agent Orange exposure caused John Lilley's lymphoma. Dr. Smuckler is Chairman of the Department of Forensic Pathology at the University of California at San Francisco Medical School. His areas of research and publication include chemically-induced cancer and the effects of exposure to chlorinated dioxins and related compounds.

Dr. Smuckler has also reviewed the records, documents and testimony submitted by plaintiffs. He notes that according to the Third National Cancer Survey: Incidence Data, National Cancer Institute Monograph 41, March 1975, attached as Exhibit B to his affidavit, for every 100,000 white males aged 40-44, 4.1 new cases of lymphocytic lymphoma occur each year. The prevalence of the disease is higher. Aff. ¶ 11. Although the etiology of lymphomas is "largely unknown," "[]here are certain recognized associations that have been established between some agents and the development of lymphomas in humans and animals." Aff. ¶¶ 13-14.

Dr. Smuckler states that one agent recognized as increasing risk of lymphoma is benzene. Aff. ¶ 16. Mr. Lilley is likely to have been exposed to benzene in many years as a flight engineer and airplane mechanic. Dr. Smuckler points out that there is an established link betwen this occupation and an increased incidence of lymphoma and leukemia. Aff. ¶ 24 & Exhibit C. Exhibit C contains articles on the increased incidence of lymphoma among those exposed to benzene and "'An Occupation Health Survey of Selected Airports" conducted by the Centers for Disease Control. This survey warns that airplane maintenance employees risk exposure to a number of toxic substances: carbon monozide, aluminum oxide, stoddard solvent, kerosene, nonflammable halogenated solvents, alkaline solu-

tions, cleaners, vapor degreasers containing chlorinated hydrocarbons, metal oxide fumes and phosgene (from welding), x-radiation (from electron beam welding), metal and nitrogen oxides (from metal spraying), benezene (from paint stripping), and a variety of other potentially hazardous substances. *See* Larsen, "An Occupational Health Survey of Selected Airports," *passim,* published by Centers for Disease Control, National Institute for Occupational Safety and Health (1974). Exhibit C also includes an article, "The Radiation Hazard from Contaminated Aircraft," which suggests that aircraft maintenance personnel are at increased risk of radiation exposure.

Dr. Smuckler has reviewed the list of scientific materials that allegedly support plaintiffs' expert. He found no references to any association between exposure to Agent Orange in Vietnam and development of malignant lymphoma. He has also reviewed the Ranch Hand studies, which find no increased incidence of lymphomas among Vietnam veterans exposed to Agent Orange. Aff. ¶¶ 19-20. Dr. Smuckler notes that the only reference cited by plaintiff that involves lymphoma is Hardell's study of agricultural and forestry workers who were exposed to a number of chemicals. Aff. ¶ 21. As already pointed out, Dr. Hardell himself concludes that his investigation "*only suggests* that exposure to organic solvents, chlorophenols and/or phenoxy acids constitutes a risk factor for malignant lymphoma." Hardell, "Malignant Lymphoma and Exposure to Chemicals," 43 Br. J. Cancer 169, 175 (1981) (emphasis supplied); *cf. Palmer v. Nova Scotia Forest Industries,* 60 N.S.R. (2d) 271, 352-53, 2 D.L.R. (4th) 397 (1983).

Dr. Smuckler concludes that "[c]onsidering the following uncontroverted facts:

a. there is no established association between exposure to Agent Orange and increased incidence of lymphoma;

b. there is no evidence of an excess incidence of lymphoma in Vietnam veterans;

c. lymphoma is a neoplastic disease that occurs in the general United States population;

d. the etiology of lymphomas is largely unknown; and

e. John Lilley's medical and occupational history demonstrates other risk factors for cancer generally and lymphoma/leukemia specifically; there is no scientific, factual or logical basis to permit or support the conclusion that it is more probable than not that John Lilley's malignancy was caused by his alleged exposure to Agent Orange in Vietnam.

Aff. ¶ 29.

IV. LAW

Defendants assert a number of legal grounds for dismissal. All defendants claim that plaintiff has not created an issue of material fact regarding causation, that plaintiff has failed to show who caused the harm alleged, and that the government contract defense bars recovery. In addition, defendant Monsanto moves to dismiss claiming that the applicable statute of limitations bars recovery.

A. *Evidence of Lack of Causation*

To prevail defendants must show that there can be no genuine issue of material fact regarding exposure to Agent Orange as a cause of John Lilley's disease. *In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223

(E.D.N.Y.1985). Plaintiff must rebut with competent, nonconclusory evidence. Fed.R.Civ.Proc. 56(3).

1. *Epidemiologic Studies*

The epidemiological studies conducted by the federal, state and Australian governments are admissible under Federal Rule of Evidence 803(8)(C), the public records and reports exception to the hearsay rule. *In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223, 1239-1241 (E.D.N.Y.1985); *see also Ellis v. International Playtex, Inc.,* 745 F.2d 292 (4th Cir.1984); *Kehm v. Procter & Gamble Manufacturing Co.,* 724 F.2d 613, 617-20 (8th Cir.1983). As previously pointed out, the Ranch Hand, Australian and other studies "alone demonstrate that on the basis of present knowledge, there is no question of fact: Agent Orange cannot now be shown to have caused plaintiffs' numerous illnesses." *In re "Agent Orange" Product Liability Litigation, supra,* at 1241.

The Ranch Hand study is particularly relevant to the instant case. John Lilley allegedly worked in Vietnam as part of Operation Ranch Hand. *See* Comeaux Aff. at ¶ 7. He was associated with the very group considered in the Ranch Hand study. No increase was found in lymphosarcoma, lymphoma or myocardial infarction among former Ranch Handers.

2. *Dr. Carnow's Affidavit*

Plaintiff attempts to overcome the unavailability of any general evidence of causation with "particularistic" proof in the form of Dr. Carnow's affidavit. *See generally,* Rosenberg, "The Causal Connection in Mass Exposure Cases: A 'Public Law' Vision of the Tort System, 97 Harv.L.Rev. 849, 855-59 (1984). Dr. Carnow concludes that "Agent Orange is the likely cause of [John Lilley's]

malignancy and death at well above the '50 percent certainty level.' " Aff. at 7. This opinion must be considered in light of Federal Rules of Evidence 403, 702 and 703. *See also* Fed.R.Ev. 101, 104(a); *Weit v. Continental Illinois National Bank and Trust Co.,* 641 F.2d 457, 467 n.38 (7th Cir.1981) (Rules of Evidence apply to summary judgment motions), *cert. denied,* 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982); *In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238, 260 (3d Cir.1983) (*In limine* rulings on admissibility appropriate even when not required by Rule 104), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985).

(a) *Rule 702*

Rule 702 of the Federal Rules of Evidence provides for opinion testimony by experts "if scientific, technical or other specialized knowledge will assist the trier of fact to determine a fact in issue" and the witness is "qualified as an expert by knowledge, experience, training or education * * *." The court must first determine whether the expert is sufficiently qualified in his or her field to be allowed to testify. *Frazier v. Continental Oil Co.,* 568 F.2d 378, 383 (5th Cir.1978). Doubts about whether the proffered evidence is helpful to the trier should be resolved in favor of admissibility. *In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238, 279 (3d Cir. 1983), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985). Finally, courts must assess the admissibility of testimony based on a novel scientific technique by balancing the relevance, reliability, and helpfulness of the evidence against the likelihood of waste of time, confusion and prejudice. *United States v. Downing,* 753 F.2d 1224 (3d Cir. 1985); *United States v. Williams,* 583 F.2d 1194, 1198 (2d Cir.1978), *cert. denied,* 439 U.S. 1117, 99

S.Ct. 1025, 59 L.Ed.2d 77 (1979); Symposium, "Science and Rules of Evidence," 99 F.R.D. 188, 229-234 (1984).

In their motion for reargument and other papers, defendants urge that Dr. Carnow is unqualified to testify because he has allegedly given contradictory testimony in various cases involving the effects of exposure to dioxin on humans and because of his general lack of credibility. There has been no dispositive proof that Dr. Carnow has committed perjury in the course of the present case. *See Harre v. A.H. Robins Co., Inc.*, 750 F.2d 1501 (11th Cir.1985). Defendants also cite Dr. Carnow's opening remark at his deposition – "I have just one statement. I'd like to know who is going to take care of my fees in this case" – as rendering him unqualified under the Federal Rules. *See* Carnow Dep. at 6, discussed in Defendants' Second Supplemental Memorandum in Support of Motion to Dismiss And/Or for Summary Judgment.

Defendants' arguments address the weight of Dr. Carnow's testimony and not its admissibility. The Federal Rules of Evidence assume that rigorous cross-examination will alleviate concern about expert testimony that is contradictory or overly influenced by the prospect of monetary gain. The jury, not the judge, decides whether these considerations have so tainted an expert's opinion as to make it unworthy of belief.

Under Rule 702, the court must merely determine whether Dr. Carnow is sufficiently qualified to testify. He received his degree in medicine from the Chicago Medical School, is board certified in occupational medicine and has had extensive professional experience in occupational and environmental medicine. Dr. Carnow belongs to a number of professional organizations and writes for professional journals. Defendants' contention that Dr.

Carnow has on several occasions failed the internal medicine board examination does not preclude him from testifying. He will be considered an expert.

The other elements of Rule 702 analysis – helpfulness and appropriate methodology – are equally satisfied by Dr. Carnow's testimony. His opinion is directed toward one of the most important issues in this protracted litigation – causation – and would therefore assist the trier of fact. *Breidor v. Sears Roebuck and Co.*, 722 F.2d 1134, 1139 (3d Cir.1983). Dr. Carnow's general scientific technique of inference from animal and other studies is acceptable. *In re "Agent Orange" Product Liability Litigation*, 611 F.Supp. 1223, 1242, 1243 (E.D.N.Y.1985); *United States v. Downing*, 753 F.2d 1224, 1237 (3d Cir.1985); *United States v. Williams*, 583 F.2d 1194, 1198 (2d Cir.1978), *cert. denied*, 439 U.S. 1117, 99 S.Ct. 1025, 59 L.Ed.2d 77 (1979).

Compliance with Rule 702 does not suffice. Rule 703 also must be considered.

(b) *Rule 703*

Rule 703 of the Federal Rules of Evidence limits the "facts" and "data" upon which an expert may rely to those "reasonably relied" upon "by experts in the field." It provides:

> The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to him at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.

Dr. Carnow does not base his conclusion about the cause of John Lilley's death on observation. Instead, the doctor relies on anecdotal information from Mrs. Lilley and on some medical records. Under Rule 703, the court must determine whether such reliance is "reasonable."

The cases interpreting this requirement have already been discussed in detail. *In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223, 1243-1244 (E.D. N.Y.1985); *see also* Hoeing, "Drawing the Line on Expert Opinions," New York Law Journal, May 22, 1985 at 1, col. 1 (reviewing recent cases).

The reasonable reliance requirement means that an expert may not base his or her testimony on hearsay that would not be used by other experts in the field. *In re Swine Flu Immunization Products Liability Litigation,* 508 F.Supp. 897, 904 (D.Colo.1981), *aff'd sub nom. Lima v. United States,* 708 F.2d 502 (10th Cir. 1983); *see also United States v. Cox,* 696 F.2d 1294, 1297 (11th Cir.), *cert. denied,* ____ U.S. ____, 104 S.Ct. 99, 78 L.Ed.2d 104 (1983); *Dallas & Mavis Forwarding Co., Inc. v. Stegall,* 659 F.2d 721, 722 (6th Cir.1981).

Dr. Carnow has never examined John Lilley. Instead, he relies almost exclusively on hearsay information about Mr. Lilley's symptoms, personal habits and medical background. The confused recollection of Mrs. Lilley about the few things she believes Mr. Lilley told her before his death is not the kind of information physicians customarily rely upon in diagnosing illness. *See Slaughter v. Abilene State School,* 561 S.W.2d 789, 791 (Tex.1977) (doctor's testimony predicated upon both hearsay and personal knowledge admissible); *Smith v. Tennessee Life Insurance Co.,* 618 S.W.2d 829, 832 (Tex.Civ.App.1981) ("report of

private investigators is not * * * the type of hearsay data that a doctor can rely upon in forming his expert opinion"). We do not have the kind of reliable statements about direct observation of actions, contemporaneous statements and symptoms usually related by a spouse. *Cf.* Fed.R.Ev., Rules 803(1), (2), (3), (4), 805. Mrs. Lilley had little or no contact with her husband for long periods of time and made no direct observations about his work or its effects upon him.

While perhaps less self-serving than the plaintiff checklists rejected in the previous opt-out opinion, *see In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223 (E.D.N.Y.1985), Mrs. Lilley's recollections about John Lilley's past statements are insufficiently trustworthy to form the basis of an expert opinion. Plaintiff has not submitted evidence that Dr. Carnow or any other physician would rely on similar information in rendering a diagnosis. *In re Japanese Electronic Products Antitrust Litigation,* 723 F.2d 238 (3d Cir.1983), *cert. granted,* ____ U.S. ____, 105 S.Ct. 1863, 85 L.Ed.2d 157 (1985).

Dr. Carnow asserts that he also relied in forming his opinion on John Lilley's medical records during Air Force Service, hospital discharge summaries and the autopsy report. *See* Aff. at 2. Use of medical records to corroborate the "patient's" statements could alleviate the problem of unreliable hearsay. *O'Gee v. Dobbs Houses, Inc.,* 570 F.2d 1084, 1089 (2d Cir.1978); *cf. Ferebee v. Chevron Chemical Co.,* 736 F.2d 1529, 1535 (D.C.Cir.) (treating physicians' reliance on test results and physical examination of patient to conclude his illness caused by exposure to paraquat), *cert. denied,* ____ U.S. ____, 105 S.Ct. 545, 83 L.Ed.2d 432 (1984). The only medical records available to the court were submitted by defendants. They fail to enhance the basis of Dr. Carnow's opinion.

These records nowhere mention "Agent Oranage" or chloracne. One record indicates that John Lilley admitted to smoking a pack of cigarettes daily for thirty years, which suggests the unreliability of Dr. Carnow's information that Mr. Lilley was a nonsmoker. Moreover, plaintiffs' expert in the related opt-out cases has stressed that quitting smoking is the "most effective single action you can take" to avoid developing cancer. S. Epstein, *The Politics of Cancer* 473 (Anchor Press ed. 1979); *cf.* Air Force Health Study, *An Epidemiologic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides* X-17 (Project Ranch Hand II Study) (Feb. 1984) (finding a "borderline significant association between systemic cancer and smoking in both groups, demonstrating the sensitivity of the analyses to the effects of this known carcinogen"). The fact that a family history of lymphosarcoma is not recorded in the medical records does not show the nonexistence of such a family history. Mr. Lilley's mother had cervical or uterine cancer. *See* Carnow Aff. at 3.

Thus, Dr. Carnow's reference to medical records does not serve to make his reliance on Mrs. Lilley's statements about her husband reasonable. Given the difficulty of establishing which of the myriad potentially hazardous substances that John Lilley probably was exposed to during his life that may have caused his cancer, precise information about his exposure history, personal habits and medical hsitory is crucial in forming an accurate opinion. Since there is no record to support his theory, Dr. Carnow's proposed testimony lacks any basis in fact. *See In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223, 1248 (E.D.N.Y.1985) (cases interpreting this aspect of Federal Rule of Evidence 703).

Courts exlcuding expert opinion for lack of adequate basis often note that it is speculative or without any factual foundation. *Merit Motors, Inc. v. Chrysler Corp.*, 569 F.2d 666, 671-73 (D.C.Cir.1977) ("To hold that Rule 703 prevents a court from granting summary judgment against a party who relies solely on an expert's opinion that has no more basis in or out of the record than [this expert's] * * * would seriously undermine the policies of Rule 56."); *see also Pennsylvania Dental Association v. Medical Service Association,* 745 F.2d 248, 262 (3d Cir.1984) (affirming exclusion of conclusory expert affidavit not based on evidence in the record), *cert. denied,* ____ U.S. ____, 105 S.Ct. 2021, 85 L.Ed.2d 303 (1985); *Barris v. Bob's Drag Chutes & Safety Equipment, Inc.*, 685 F.2d 94, 101-02 n. 10 (3d Cir.1983) (trial court properly excluded expert testimony as to strenght of fibers in harness where no showing that expert relied on facts or data from plaintiff's other expert); *United States v. Various Slot Machines on Guam,* 658 F.2d 697, 700 (9th Cir.1981) (summary judgment appropriate where opposition to motion consisted of expert opinions without factual basis).

Most important, Dr. Carnow fails to consider the relevant epidemiologic studies conducted on Vietnam veterans. This omission is particularly incomprehensive in Mr. Lilley's case, since he was allegedly associated with the very group considered in the Ranch Hand Study. *See* Air Force Health Study, *An Epidemiolgoic Investigation of Health Effects in Air Force Personnel Following Exposure to Herbicides* (February 24, 1984) (Ranch Hand II Study — 1984 Report). As already noted, the Air Force Study found no increased incidence of lymphosarcoma among Ranch Handers. *Id.* at X-6, Table X-5 (Morbidity Site Specific Verified Systemic Malignant Neoplasms). Dr. Carnow's claim that Agent Orange exposure caused Mr.

Lilley's myocardial infarction is similarly without support. *See id.* at XV1-1-21 "[c]entral cardiovascular system abnormalities * * * showed no statistically significant Ranch Hand-comparison group differences, but did reflect a strong correlation to increased age and, to a lesser degree heavy past smoking."); *see also* Smuckler Aff. (describing risk factors for coronary artery disease present in John Lilley's history).

Dr. Carnow states that the incidence rate for deaths from lymphosarcomatous leukemia in the population at large "in white males age 40 years in the period 1959-69 was 2 to 3 per 100,000" which he concludes is "relatively rare." Aff. at 4. He further notes that certain factors – geographic location, familial history, exposure to radiation, and immuno-suppression – increase the risk of developing lymphosarcoma.

Dr. Carnow's data is generally borne out by the literature. *See* M.M. Wintrobe, G.R. Lee, D.R. Boggs, T.C. Bithell, J. Foerster, J.W. Athens, J.N. Lukens, *Clinical Hematogoloy* 1449-83 (1981) (cause of lymphoma or leukemia unknown, but timespace clustering, environmental factors, familial disease and ethnic differences important). A more recent survey finds a higher incidence than does Dr. Carnow of the disease for Mr. Lilley's age group – 4.1 per 100,000. *See* "Third National Cancer Survey: Incidence Data," National Cancer Institute Monograph 41, March 1975 (attached as Exhibit B to Smuckler Aff.). In contrast to the association Dr. Carnow finds between exposure to Agent Orange and lymphosarcoma, "with the exception of gamma irradiation and benzene and related hydrocarbons, no firm relationship of such factors to disease has been established." Wintrobe, *et al., supra,* at 1477; J. Aleksandrowicz & A. Skotnicki, *Leukemia Ecology: Ecological Prophylaxis of Leukemia*

47-69 (1982) (ionizing radiation and benzene are leukemogenic agents).

Commentators stress what Dr. Carnow ignores – that the etiology of leukemia and lymphosarcoma is unknown. *See, e.g.* Wintrobe, *supra,* at 1471; *see also* F.W. Gunz, "The Etiology of Leukemia" (Introduction), VII *Series Haematologica* 91-93 (1974) (describing leading etiologic hypotheses, including the element of personal susceptibility); *cf.* J.R. Durant & R.V. Smalley, *The Chronic Leukemias: Chemistry, Pathophysiology, and Treatment* 54-55 (1972) (only difference between lymphosarcoma and lymphatic leukemia is extent of involvement and organs affected).

The uncertainty surrounding the etiology of lymphosarcoma underscores the central problem with Dr. Carnow's testimony: he applies a causal hypothesis without any scientific support and excludes other potential causes without any factual basis for doing so. John Lilley's long career "tearing engines apart" makes it far more likely that exposure to benzene or radiation from contaminated aircraft caused his lymphosarcoma. *See* J.L. Kulp & J.L. Dick, "The Radiation Hazard from Contaminated Aircraft," 4 *Health Physics* 133-56 (1960), attached as Exhibit C to Aff. of Edmund A. Smuckler, M.D., In Support of Defendants' Motion to Dismiss or for Summary Judgment. It is impossible to pinpoint which of the many personal, familial and environmental factors – alone or in combination – is responsible. *See* Aleksandrowicz & Skotnicki, *supra,* at 72-85 (arguing that naturally occurring carcinogens such as mycotoxins may play a role in leukemia); S. Epstein, *The Politics of Cancer* 19 (Anchor Press ed. 1979).

In conclusion, there are no facts that rationally support Dr. Carnow's opinion. The only information available on

John Lilley is sketchy and unreliable. Dr. Carnow's assumption that Mr. Lilley was exposed to no toxic substance other than Agent Orange during his lifetime is baseless. Dr. Carnow's information about Mr. Lilley's family history and personal habits is suspect. The only relevant epidemiologic studies, which were conducted on the very group with whom John Lilley apparently served, are entirely negative. *Cf. Perry v. United States,* 755 F.2d 888, 891 (11th Cir. 1985) (" 'somewhere along the line you have to show some kind of statistical relation to make that connection valid.' "). Dr. Carnow's resort to inappropriate studies of animals and workers exposed during industrial accidents, *see supra* III.B.1, cannot redeem his unfounded opinion. The conclusions set forth in the Carnow affidavit would be excluded at trial under Rule 703 of the Federal Rules of Evidence. *See* Fed. R.Ev. 104(a); *cf. Anderson v. City of Bessemer City,* ____ U.S. ____, 105 S.Ct. 1504, 84 L.Ed.2d 518 (1985) (clearly erroneous standard applies to district court ruling).

(c) *Rule 403*

Federal Rules of Evidence 403 requires the court to exclude relevant evidence "if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury * * *." A determination to exclude such evidence lies within the trial court's discretion. *Jackson v. Johns-Manville Sales Corp.,* 750 F.2d 1314, 1319 (5th Cir.1985).

The unfounded assumptions and speculation underlying Dr. Carnow's testimony reduce its probative value to a point approaching zero. *American Bearing Co., Inc. v. Litton Industries, Inc.,* 729 F.2d 943, 950 n. 14 (3d Cir.), *cert. denied,* ____ U.S. ____, 105 S.Ct. 178, 83 L.Ed.

2d 112 (1984). Establishing the testimony's low probative value would embroil the jury in a protracted and fruitless inquiry into complex issues. *See City of New York v. Pullman,* 662 F.2d 910, 915 (2d Cir.1981), *cert. denied,* 454 U.S. 1164, 102 S.Ct. 1038, 71 L.Ed.2d 320 (1982). The false aura of scientific infallibility surrounding Dr. Carnow's opinion makes the court particularly reluctant to admit it. *Id.* The likelihood that admitting Dr. Carnow's opinion would waste the trier's time is particularly disturbing in a litigation that has already dragged on for many years. *See Weit v. Continental Illinois National Bank and Trust Co.,* 641 F.2d 457, 467 (7th Cir.1981), *cert. denied,* 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982). On balance, then, Dr. Carnow's testimony would be excluded under Rule 403 even if it were competent under Rule 703.

3. *Defendants' Affidavits*

The affidavits of Doctors Smuckler and Sonnenblick confirm the unreliability of plaintiff's expert testimony. As discussed *supra* III C, defendants' experts support the conclusion that the scientific literature to date offers no basis for concluding that exposure to Agent Orange caused John Lilley's lymphosarcoma and coronary artery disease. The doctors further suggest that John Lilley's smoking, high cholesterol, family history and occupational exposure to benzene and radiation are more likely causes of Mr. Lilley's illness and death.

The opinions of Doctors Smuckler and Sonneblick would be admissable at trial. They are reputable physicians with a high degree of expertise in their respective areas. Fed.R.Ev. 702. In contrast to Dr. Carnow, they take into account the entire body of relevant scientific

literature, including the Ranch Hand and other studies of exposed veterans. While obviously not plaintiff's treating physicians (who, if they are available, have not been relied upon by plaintiff or defendants), defendants' experts have considered the relevant medical records, which are submitted as exhibits to their affidavits.

B. *Appropriateness of Granting Summary Judgment*

The court has scrutinized all of the evidence relevant to John Lilley's claim with great care. *See In re "Agent Orange" Product Liabililty Litigation,* 611 F.Supp. 1223, 1260 (E.D.N.Y.1985); *Tabatchnick v. G.D. Searle & Co.,* 67 F.R.D. 49, 55 (D.N.J. 1975) (careful screening of expert opinion on causation "especially important when the subject is emotionally charged, as it is here."); *cf. Manual for Complex Litigation 2d* § 21.4.8 at 21-60-61 & nn. 117-20 (Draft. Feb. 1985). Defendants have met their burden of showing that no genuine issue of fact exists.

For purposes of deciding this motion, the court has assumed, based on John Comeaux's affidavit, that Mr. Lilley was exposed to Agent Orange in Vietnam. The rash and subsequent discoloration that John Lilley developed on his legs upon returning from Vietnam *may* have been chloracne. *See* S.L. Moschella & H.J. Hurley, 2 *Dermatology* 1714-15 (2d ed. 1985); A. Rook, D.S. Wilkinson, F.I.G. Ebling, eds., *Textbook of Dermatology* 1726-28 (1979); *but cf.* Ranch Hand Study at XV-3 ("chloracne; following mild to moderate exposures, is classically found in skin areas on the temples, eyes/eyelids, and ears. * * *"). Chloracne is a fairly reliable indicator of exposure since it appears shortly after contact with the suspected chemical (even though it tends to disappear thereafter). *In re "Agent*

Orange" Product Liability Litigation, 597 F.Spp. 740, 794-95 (E.D.N.Y.1984).

Plaintiff's lawsuit, however, does not rest on damge from chloracne. *Cf.* Tr. at 182 (March 5,1985) (remarks of Plaintiffs' Management Committee Member David Dean) (chloracne without disability not compensable). It rests on the far more serious diseases of lymphosarcoma and myocardial infarction. The epidemiologic studies and affidavits relied upon by the defendants make clear that no rational jury could conclude that exposure to Agent Orange caused John Lilley's illness and death.

Plaintiff's attempt to create a material issue of fact with conclusory allegations and inadmissable expert testimony must fail. Fed.R.Civ.Proc. 56(e). It is well-setttled that a litigant opposing summary judgment "'may not rest upon mere conclusory allegations or denials' as a vehicle for obtaining a trial." *Quinn v. Syracuse Model Neighborhood Corp.,* 613 F.2d 438, 445 (2nd Cir.1980); *see In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223, 1256-1260 (E.D.N.Y. 1985) (citing numerous cases in the Second and other Circuits elaborating on this requirement).

Summy judgment is even more appropriate here than in the other opt-out cases because extensive discovery has been conducted in the *Lilley* case and it is highly unlikely that any new evidence of substance can be obtained. *See Grumman Allied Industries, Inc. v. Rohr Industries, Inc.,* 748 F.2d 729, 740 (2d Cir.1984); *Schering Corp. v. Home Insurance Co.,* 712 F.2d 4, 10 (2d Cir.1983); *Weit v. Continental Illinois National Bank & Trust Co.,* 641 F.2d 457, 464 (7th Cir.1981), *cert. denied,* 455 U.S. 988, 102 S.Ct. 1610, 71 L.Ed.2d 847 (1982). This court granted plaintiff every reasonable opportunity to present a case by granting

adjournments and requesting additional information. It has taken into consideration all the evidence from all related M.D.L. cases that could possibly support plaintiff's causal hypothesis.

Considering all of the evidence and potential evidence, there is no question that a directed verdict would be entered at the close of plaintiff's case. *National Industries, Inc. v. Republic National Life Insurance Co.,* 677 F.2d 1258, 1265 (9th Cir. 1982). It is uncontroverted that John Lilley was a member of the general population at risk of contracting the diseases that he did, that no study of veterans exposed to Agent Orange in Vietnam shows an increased incidence of these diseases, and that no treating physician linked John Lilley's illness to Agent Orange exposure. *Compare Ferebee v. Chevron Chemical Co.,* 736 F.2d 1529 (D.C.Cir.),*cert. denied,* ____ U.S. ____, 105 S.Ct. 545, 83 L.Ed.2d 432 (1984). Under the circumstances, defendants are entitled to judgment as a matter of established tort law. *See Johnston v. United States,* 597 F.Supp. 374, 412 (D.Kan.1984); *Allen v. United States,* 588 F.Supp. 247, 416-443 (D. Utah 1984); *see also Miller v. National Cabinet Co.,* 8 N.Y.2d 277, 289, 204 N.Y.S.2d 129, 138, 168 N.E.2d 811, 820 (1960).

Granting summary judgment in this case does not involve issues of credibility or demeanor. The documents and studies submitted to the court establish that there can be no question of fact as to whether Agent Orange caused plaintiff's illness and death. *Cf. Anderson v. City of Bessemer City,* ____ U.S. ____, 105 S.Ct. 1504, 1512, 84 L.Ed.2d 518 (1985).

C. *Other Grounds for Granting the Motion*

Even if plaintiff could show a causal link between Agent Orange and John Lilley's illness, several other legal difficulties preclude recovery. These include the Maryland statute of limitations, *see In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 800-816 & Appendix E. (E.D.N.Y.1984), the liability to demonstrate which defendant caused harm, *id.* at 819-833, and the government contract defense. *See, e.g., In re "Agent Orange" Product Liability Litigation,* 534 F.Supp. 1046 (E.D.N.Y. 1982); *In re "Agent Orange" Product Liability Litigation,* 597 F.Supp. 740, 795-96 (E.D.N.Y.1984); *Koutsoubos, Spiros v. Boeing Vertol,* 755 F.2d 352 (3d Cir.1985). In view of the court's finding on causation, there is no need to further explore these issues. *See* the discussion in *In re "Agent Orange" Product Liability Litigation,* 611 F.Supp. 1223 (E.D.N.Y.1985).

V. CONCLUSION

Summary judgment is granted. The complaint is dismissed without costs, disbursements or attorneys fees. This memorandum constitutes a final judgment.

SO ORDERED.